

Eckardt Johanning, M.D. M.Sc.  
Occupational and Environmental Life Science

650 Warren Street (Medical Arts Building)

Albany, N.Y. 12208

Phone: (518) 459 3336 Fax: (518) 459 4646

TAX ID # 14-1813653 NY STATE LICENCE 175278-1

Board Certified in:  
Occupational and Environmental Medicine  
Family Medicine

GUARANTOR/PATIENT NAME AND ADDRESS				PATIENT NO.	PATIENT NAME		WC NO.	EXAM DATE						
					<i>Jack Marran</i>			<i>1/17/02</i>						
				DATE OF BIRTH	TELEPHONE NO.	INSURANCE								
				<i>02/29/46</i>	<i>513-759-3620</i>									
					CODE	DESCRIPTION	CERTIFICATE NO.							
<i>SS.099-34-6381</i>														
OFFICE SERVICES				✓ CODE	FEES	PROCEDURES	✓ CODE	FEES	OFFICE LAB Cont.	✓ CODE	FEES	DIAGNOSIS	✓ CODE	FEES
NEW PATIENT			EKG				93000		NEBULIZER			RESPIRATORY		
COMPREHENSIVE VISIT	99205		EAR Audiometry						CHOLINESTERASE	V80		LARYNGITIS/TRACHEITIS acute	464	
EXTENDED VISIT	99204		AUDIOSCOPE	92552								LARYNGITIS/TRACHEITIS chronic	476	
INTERMEDIATE VISIT	99203		SPIROMETRY (recording)	94010	45							BRONCHITIS/bronchitis acute	486.0	
LIMITED VISIT	99202		SPIROMETRY Pre-Post (record)	94060	65							BRONCHITIS	490	
ESTABLISHED PATIENT			PEAK FLOW	94150	5	DIAGNOSIS	✓ CODE	FEES				ASTHMA extrinsic	493.0	
COMPREHENSIVE VISIT	99215		REMOVE FOREIGN BODY EYE	65220		RESPIRATORY						ASTHMA intrinsic/acute onset	493.1	
EXTENDED VISIT	99214		URINALYSIS V71.8	81000			COAL WORK ANTHRACOSIS	500				CHRON OBSTR ASTHMA	493.2	
INTERMEDIATE VISIT	99213		MICR ALB	82044		ASBESTOSIS	501					ASTHMA/BRONCHITIS (NOS)	493.9	
RECHECK VISIT BRIEF	99212		HEMOCCULT	82270	5	PLEURAL PLAQUES	511					PNEUMONIA/PNEUMONITIS	495	
MINIMAL SERVICE	99211		VENIPUNCTURE	G0001		SILICA PNEUMOCONIOSIS	502					Extrinsic allergic alveolitis (HP)	495	
WORKERS' COMP			VENIPUNCTURE	36415		PNEUMOCON INORGANIC DUST (METAL)	503					Extrinsic allergic alveolitis (HP)	495.8	
						BYSSINOSIS	504					Organic dust (wood, grain, fungi)		
CONSULTATION												EMPHYSEMA	492	
NEW/ESTABL.														
COMPREHENSIVE VISIT	99245	<i>500</i>	House/Work Services				PNEUMOCONIOSIS unspecified	505				COPD (NOS)	496	
EXTENDED VISIT	99244		House call				Chemical fumes & vapors respirat	506				REACTIVE AIRWAY DISEASE	495.9	
INTERMEDIATE VISIT	99243		Limited	99347			PNEUMONITIS SOLIDS/LIQUIDS	507				DYSPNOE	786.0	
RECHECK VISIT BRIEF	99242		Intermediate	99348			RADIATION PNEUMONITIS	508				COUGH	786.2	
MINIMAL SERVICE	99341		Complex	99349			RESTRICTIVE LUNG DISEASE	518.8						
DIAGNOSIS HEENT	✓ CODE		MUSCULOSKELETAL	✓ CODE			SKIN					NEUROLOGIC Cont.		CODI
SINUSITIS acute NOS	461.8		JOINT DISORDER unspecified	718.9		ACNE						PTSD	309.6	
SINUSITIS chronic	471.0		LUMBOSACRAL STRAIN/LUMBAGO	724.2		HIVE REACTION						ORGANIC BRAIN SYNDROME	310.	
RHINITIS allergic	477.9		SCIATICA	724.3		CONTACT DERMATITIS/ECZEMA						692		
RHINITIS chronic	472.0		BACKACHE unspecified	724.5		CD - OIL						692.1		
OTITIS MEDIA	382.3		OTHER BACK SYMPTOMS	724.8		CD - SOLVENTS						692.2		MISCELLANEOUS
NASOPHARYNGITIS chronic	472.2		ACUTE CERVICAL STRAIN	847.0		CD - OTHER CHEMICALS						692.4		VIRAL SYNDROME
PHARYNGITIS	462		CERVICAL REGION, OTHER DISORDER	723.		CD - METALS						692.8		DIABETES
CONJUNCTIVITIS	372.0		TENDINITIS	726.90		CD - NOS						692.9		ANEMIA
UPPER RESP TRACT HYPERSENSIT.	478.8		BURSITIS	727.2		ONYCHOMYCOSIS						110.1		OBESITY
OTHER DISEASE NASAL CAVITY	478.1		(FIBRO) MYALGIA AND MYOSITIS	729.1		ATOPIC DERMATITIS								
NOISE INDUCED HEARING LOSS	388.12		KNEE PAIN	718.46		URTICARIA						691		LACERATION
HEARING LOSS (sensorineural)	389.1		EPICONDYLITIS, LATERAL	726.32		RASH OTHER NONSPECIF LESION						708.		FATIGUE
CARDIOVASCULAR			SHOULDER PAIN	719.41		NEUROLOGIC						782.1		PAIN GENERALIZED
ARRHYTHMIA	427.9		CHEST PAIN	786.50		TOXIC ENCEPHALITIS						782.0		NUMBNESS, TINGLING
CHF	428.0		DeQuervain's TENDINITIS	727.04		ENCEPHALOPATHY unspecified						323.7		LIVER FUNCTION TEST ABNORMAL
HYPERTENSION	401.1		MUSCLE SPASM	728.85		TOXIC ENCEPHALOPATHY (SOLVENT)						348.3		ELEVATED IMMUNOGLOBULINS
PERIPHERAL VASCULAR DISEASE	443.9		SPRAIN AND STRAIN OF JOINTS	840-848		NERVE ROOT / PLEXUS DISORDER						349.8		LEAD POISONING
EDEMA	782.3		RHEUMATISM	729		MONONEURITIS UPPER LIMP						2		
CAD	414.9		SYNOVITIS AND TENOSYNOVITIS	727.0		CARPAL TUNNEL SYNDROME						354.1		ARSENIC TOXICITY
HYPERCHOLESTEROLEMIA	272.0					ULNAR NERVE LESION						354.0		CADMIUM TOXICITY
GASTROINTESTINAL						MONONEURITIS / ENTRAPMENT						354.2		METAL FUME FEVER
ABDOMINAL PAIN	789.00					POLYNEUROPATHY toxic reaction						355.9		POLYMER FUME FEVER
GASTRITIS	535.50					DEPRESSION						357.7		FORMALDEHYDE SENSITIZATION
GASTROENTERITIS	509.0					SEIZURE DISORDER						311		CHEMICAL SENSITIZATION
VIRAL	508.6					SITUATIONAL STRESS						345		NEEDLESTICK INJURY
RECTAL BLEEDING	569.3					ADD						309.9		BURN
IRRITABLE BOWEL/DIARRHEA	558.9					HEADACHE						314		TOXIC EFFECT OF AFLATOX / MYCOTOX
HEMORRHOIDS	455.6					MIGRAINE HEADACHE						784.0		TOXIC EFFECT OF PESTICIDES organoch.
ESOPHAGEAL REFLUX	530.11					ANXIETY SYMPTOMS						346.9		RADIATION EFFECT
Other DIAGNOSIS / Remarks:												300.0		ALLERGY, UNSPECIFIED

DR. SIGNATURE *E. Johanning*THIS COPY FOR INSURANCE USE: ATTACH TO CLAIM FORM AND FORWARD TO  
INSURANCE COMPANY. IF RECEIPTED FORM IS REQUIRED PLEASE RETURN WITH SELF-ADDRESSED STAMPED  
ENVELOPE.DISABILITY - PARTIAL D. @ RETURN TO WORK: DATE  
TOTAL D. @

		INSURANCE	PATIENT
		TODAY'S CHARGES	
		PAID ON ACCOUNT	450
CHECK CASH ADJ.			
			<i>ck 3018</i>
		TOTAL DUE	-0-

THIS IS THE ONLY ITEMIZED RECEIPT THAT WILL BE ISSUED FROM OUR OFFICE.



# SPECIALTY LABORATORIES

2211 Michigan Avenue      310·828·6543  
Santa Monica, CA 90404-3900 800·421·4449

SPECIALTY # 002-1240793  
CLIENT # 44019

PATIENT NAME: MARRONE, JACK

PHYSICIAN: 44019

NOTES:

PATIENT ID:

SPECIMEN ID:

DOB: 02/22/46    AGE: 55 Years  
SEX: Male

FUNGAL RESEARCH GROUP, INC  
ATTN: ECKARDT JOHANNING, MD  
450 WARREN STREET

ALBANY

NY 12208

DRAWN: Not Given  
RECEIVED: 01/26/02 PM 46  
PRINTED: 02/01/02 01 57  
MATERIAL: SERUM

TEST NAME	RESULTS	REFERENCE RANGE
IgG SUBCLASSES 1, 2, 3 & 4		
IgG Subclass 1	941	mg/dL (344-966)
IgG Subclass 2	494	mg/dL (133-622)
IgG Subclass 3	74	mg/dL (15-138)
IgG Subclass 4	58	mg/dL (1-115)
IgG Total	1656	mg/dL (900-1600)



# SPECIALTY LABORATORIES

2211 Michigan Avenue      310-828-6543  
Santa Monica, CA 90404-3900 800-421-4449

SPECIALTY # 002-1240793  
CLIENT # 44019

PATIENT NAME: MARRONE, JACK

PHYSICIAN: 44019

NOTES:

PATIENT ID:

SPECIMEN ID:

DOB: 02/22/46 AGE: 55 Years  
SEX: Male

FUNGAL RESEARCH GROUP, INC  
ATTN: ECKARDT JOHANNING, MD  
650 WARREN STREET

ALBANY

NY 12208

DRAWN:

Not Given

RECEIVED:

03/06/02 12:40

PRINTED:

03/06/02 11:55

FINAL REPORT

03/06/02 12:40

1141

## TEST NAME

## RESULTS

## REFERENCE RANGE

### LYMPHOCYTE ENUMERATION: BASIC & NK CELLS

Total WBC Count	5.2	$\times 10^9/L$	(4.0-11.0)
Total Lymphs (% of WBC)	38	%	(20-40)
Total Lymphocyte Count	1976	/UL	(1500-3000)

### T-LYMPHOCYTES

% CD3 (Mature T Cells)	74	%	(67-87)
Absolute CD3	1462	/UL	(1507-1953)

### T-LYMPHOCYTE SUBSETS

% CD4 (Helper/Inducer)	43	%	(32-64)
Absolute CD4	909	/UL	(780-1440)
% CD8 (Cytotoxic/Suppressor)	26	%	(14-35)
Absolute CD8	914	/UL	(515-768)
CD4/CD8 Ratio	1.7		(0.9-2.2)

### B-CELLS/PLASMA CELLS

% CD19 (Earliest B cell)	17	%	(5-22)
Absolute CD19	335	/UL	(113-695)

### NATURAL KILLER CELLS

% CD56 (High Lymphoid Cell)	91	/UL	(1-35)
-----------------------------	----	-----	--------

This test or one or more of its components was developed and its performance characteristics determined by Specialty Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. The FDA has determined that such clearance or approval is not necessary. This test is used for clinical purposes. It should



# SPECIALTY LABORATORIES

2211 Michigan Avenue      310-828-6543  
Santa Monica, CA 90404-3900 800-421-4449

PRESIDALITY #: UOE-1840793  
CLIENT #: 44019

PATIENT NAME: MARRONE, JACK

PHYSICIAN: 44019

NOTES:

PATIENT ID:

SPECIMEN ID:

DOB: 02/22/46    AGE: 55 Years

SEX: Male

FUNGAL RESEARCH GROUP, INC  
ATTN: ECKARDT JOHANNING, MD  
450 WARREN STREET

ALBANY

NY 12208

DRAWN: Not Given

RECEIVED: 01/26/02 12:40

PRINTED: 02/01/02 01:39

FINAL REPORT: 01/27/02 01:41

12:40

## TEST NAME

## RESULTS

## REFERENCE RANGE

not be regarded as investigational or for research. This laboratory is certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA) as qualified to perform high complexity clinical laboratory testing.

## LYMPHOCYTE MITOGEN PROLIFERATION ANALYSIS

THM % Index  
CON A % Index  
PWM % Index

52 % (2-70)  
86 % (> 70)  
89 % (> 70)

## T-Lymphocyte Mitogen Proliferation Calculation

$$\text{Stimulation Index (SI)} = \frac{\text{Stimulated CPM}}{\text{Unstimulated, Resting CPM}}$$

$$\text{Log SI of Patient} = \frac{\text{Log SI of Patient}}{\text{Log SI of Control}} \times 100$$

This test or one or more of its components was developed and its performance characteristics determined by Specialty Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. The FDA has determined that such clearance or approval is not necessary. This test is used for clinical purposes. It should not be regarded as investigational or for research. This laboratory is certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA) as qualified to perform high complexity clinical laboratory testing.



# SPECIALTY LABORATORIES

2211 Michigan Avenue 310-828-6543  
Santa Monica, CA 90404-3900 800-421-4449

Case 1:01-cv-00773-YK Document 157-2 Filed 05/16/2003 Page 5 of 64

SPECIALTY # 1002-1240793  
CLIENT # 144019

PHYSICIAN 44019

## NOTES:

PATIENT ID:

SPECIMEN 10

DOB: 02/28/46 AD AGE: 49 years  
SEX: Male

SEX: Male

FUNGAL RESEARCH GROUP, INC  
ATTN: ERKARDT JOHANNING, MD, 110  
450 WARREN STREET

ALBANY NY 12208

DRAWN:  
RECD 3/18/00  
PRINTED:  
3/18/00 BY 000123456789

TEST NAME

## RESULTS

## REFERENCE RANGE

**TESTS REQUESTED**

RECEIVED U.S. GOVERNMENT PRINTING OFFICE 1943

### **Tentative Requests:**

## 1. IgG SUBCLASSES 1, 2, 3, & 4, LYMPHOCYTE ENUMERATION, BASIC & NK CELLS, LYMPHOCYTE MITOGEN PROLIFERATION ANALYSIS

144019 19004

1

*Gret Palant, M.D.*

# Eckardt Johanning, M.D. M.Sc. Occupational and Environmental Life Science

**Board Certified in:  
Occupational and Environmental Medicine  
Family Medicine**

**650 Warren Street (Medical Arts Building)**  
**Albany, N.Y. 12208**  
**Phone: (518) 459 3336 Fax: (518) 459 4646**

GUARANTOR/PATIENT NAME AND ADDRESS			PATIENT NO.	PATIENT NAME			WC NO.	EXAM DATE						
				<i>Karen Maccone</i>				<i>1/17/02</i>						
			DATE OF BIRTH	TELEPHONE NO.	INSURANCE									
			<i>10/02/56</i>	<i>573-759-3620</i>	CODE	DESCRIPTION	CERTIFICATE NO.							
SS: 171-44-0593														
OFFICE SERVICES														
NEW PATIENT	N	CODE	FEES	PROCEDURES	V	CODE	FEES	OFFICE LAB Cont.	V	CODE	FEES	DIAGNOSIS	V	CODE
COMPREHENSIVE VISIT		98205		EKG		93000		NEBULIZER		94664		RESPIRATORY		
EXTENDED VISIT		98204		EAR Audiometry				CHOLINESTERASE		V80		LARYNGITIS/TRACHEITIS acute		464
INTERMEDIATE VISIT		98203		AUDIOSCOPE		92552						LARYNGITIS/TRACHEITIS chronic		476
LIMITED VISIT		98202		SPIROMETRY (recording)		94010	45					BRONCHITIS/-itis acute		466.0
ESTABLISHED PATIENT				SPIROMETRY Pre-Post (record)		94080	65					BRONCHITIS		490
COMPREHENSIVE VISIT		98215		PEAK FLOW		94150	5	DIAGNOSIS	V	CODE		ASTHMA extrinsic		493.0
EXTENDED VISIT		98214		REMOVE FOREIGN BODY EYE		65220		RESPIRATORY				ASThma intrinsic/late onset		493.1
INTERMEDIATE VISIT		98213		URINALYSIS V71.8		81000		COAL WORK, ANTHRACOSIS		500		CHRON OBSTR ASTHMA		493.2
RECHECK VISIT BRIEF		98212		MICR ALB		82044		ASBESTOSIS		501		ASTHMA/BRONCHITIS (NOS)		493.9
MINIMAL SERVICE		98211		HEMOCCULT		82270	5	PLEURAL PLAQUES		511		PNEUMONIA/PNEUMONITIS		496
WORKERS'COMP				VENIPUNCTURE		G0001		SILICA PNEUMOCONIOSIS		502		Extrinsic allergic alveolitis (HP)		495
CONSULTATION				VENIPUNCTURE		36415		PNEUMOCON INORGANIC DUST (METAL)		503		Extrinsic allergic alveolitis (HP)		495.8
NEW/ESTABL.								BYSSINOSIS		504		Organic dust (wood, grain, fungi)		
COMPREHENSIVE VISIT		99245	450	House/Work Services				PNEUMOCONIOSIS unspecified		505		EMPHYSEMA		492
EXTENDED VISIT		99244		House call				Chemical fumes & vapors respirat		506		COPD (NOS)		496
INTERMEDIATE VISIT		99243		Limited		89347		PNEUMONITIS SOLIDS/LIQUIDS		508		REACTIVE AIRWAY DISEASE		495.9
RECHECK VISIT BRIEF		99242		Intermediate		98348		RADIATION PNEUMONITIS		507		DYSPNOE		786.0
MINIMAL SERVICE		99341		Complex		98349		RESTRICTIVE LUNG DISEASE		508		COUGH		786.2
DIAGNOSIS HEENT	N	CODE	MUSCULOSKELETAL		V	CODE	SKIN					NEUROLOGIC Cont.		CODE
SINUSITIS acute NOS		464.8	JOINT DISORDER unspecified			719.9	ACNE					706.1 PTSD		309.8
SINUSITIS chronic		473.9	LUMBOSACRAL STRAIN/LUMBAGO			724.2	HIVE REACTION					708.9 ORGANIC BRAIN SYNDROME		310
RHINITIS allergic		472.9	SCIATICA			724.3	CONTACT DERMATITIS/ECZEMA					692		
RHINITIS chronic		472.8	BACKACHE unspecified			724.5	CD - OIL					692.1		
OTITIS MEDIA		382.3	OTHER BACK SYMPTOMS			724.8	CD - SOLVENTS					692.2	MISCELLANEOUS	
NASOPHARYNGITIS chronic		472.2	ACUTE CERVICAL STRAIN			847.0	CD - OTHER CHEMICALS					692.4	VIRAL SYNDROME	
PHARYNGITIS		462	CERVICAL REGION, OTHER DISORDER			723.	CD - METALS					692.8	DIABETES	
CONJUNCTIVITIS		372.0	TENDINITIS			726.80	CD - NOS					692.9	ANEMIA	
UPPER RESP TRACT		478.8	BURSITIS			727.2	ONYCHOMYCOSIS					110.1	OBESITY	
HYPERSENSIT.														
OTHER DISEASE NASAL CAVITY		478.1	(FIBRO) MYALGIA AND MYOSITIS			729.1	ATOPIC DERMATITIS					691	LACERATION	
NOISE INDUCED HEARING LOSS		388.12	KNEE PAIN			719.46	URTICARIA						370.0	
HEARING LOSS (sensorineural)		389.1	EPICONDYLITIS, LATERAL			726.32	RASH OTHER NONSPECIF LESION					708.	FATIGUE	
CARDIOVASCULAR			SHOULDER PAIN			719.41	NEUROLOGIC					782.1	PAIN GENERALIZED	
ARRHYTHMIA		427.9	CHEST PAIN			786.50	TOXIC ENCEPHALITIS					782.0	NUMBNESS, TINGLING	
CHF		428.0	DeQUERVAIN'S TENDINITIS			727.04	ENCEPHALOPATHY unspecified					323.7	LIVER FUNCTION TEST ABNORMAL	
HYPERTENSION		401.1	MUSCLE SPASM			728.85	TOXIC ENCEPHALOPATHY (SOLVENT)					348.3	ELEVATED IMMUNOGLOBULINS	
PERIPHERAL VASCULAR DISEASE		443.9	SPRAIN AND STRAIN OF JOINTS			840-848	NERVE ROOT /PLEXUS DISORDER					349.8	LEAD POISONING	
EDEMA		782.3	RHEUMATISM			729	MONONEURITIS UPPER LIMP					353	MERCURY TOXICITY	
CAD		414.9	SYNOVITIS AND TENOSYNOVITIS			727.0	CARPAL TUNNEL SYNDROME					354	ARSENIC TOXICITY	
HYPERCHOLESTEROLEMIA		272.0					ULNAR NERVE LESION					354.0	CADMIUM TOXICITY	
GASTROINTESTINAL							MONONEURITIS / ENTRAPMENT					354.2	METAL FUME FEVER	
ABDOMINAL PAIN		789.00					POLYNEUROPATHY toxic reaction					355.9	POLYMER FUME FEVER	
GASTRITIS		535.50					DEPRESSION					357.7	FORMALDEHYDE SENSITIZATION	
GASTROENTERITIS		009.0					SEIZURE DISORDER					311	CHEMICAL SENSITIZATION	
VIRAL		008.8					SITUATIONAL STRESS					345	NEEDLESTICK INJURY	
RECTAL BLEEDING		569.3					ADD					309.9	BURN	
IRRITABLE BOWEL/DIARRHEA		558.9					HEADACHE					314	TOXIC EFFECT OF AFLATOX / MYCOTOX	
HEMORRHIODS		455.8					MIGRAINE HEADACHE					784.0	TOXIC EFFECT OF PESTICIDES organoph.	
ESOPHAGEAL REFLUX		530.11					ANXIETY SYMPTOMS					346.9	RADIATION EFFECT	
												300.0	ALLERGY UNSPECIFIED	

**Other DIAGNOSIS / Remarks:**

<u>DR. SIGNATURE</u>	<i>[Signature]</i>	<u>INSURANCE</u>	<u>PATIENT</u>
		<u>TODAY'S CHARGES</u>	<i>458</i>
		<u>PAID ON ACCOUNT</u>	<i>458</i>
		<u>CHECK CASH ADJ.</u>	
	<i>[Signature]</i>	<i>3018</i>	
			<u>TOTAL DUE</u> - <i>2</i>

**THIS COPY FOR INSURANCE USE: ATTACH TO CLAIM**

THIS COPY FOR INSURANCE USE: ATTACH TO CLAIM FORM AND FORWARD TO  
INSURANCE COMPANY. IF RECEIPTED FORM IS REQUIRED PLEASE RETURN WITH SELF-ADDRESSED STAMPED  
ENVELOPE.

**DISABILITY - PARTIAL D. & RETURN TO WORK:** DATE

THIS IS THE ONLY ITEMIZED RECEIPT THAT WILL BE ISSUED FROM OUR OFFICE



# SPECIALTY LABORATORIES

2211 Michigan Avenue 310-828-6543  
Santa Monica, CA 90404-3900 800-421-4449

SPECIALTY # 002-1240808

CLIENT # 44019

DIAG. CODES: 806.016

CRM: (PATIENT NAME) MARRONE, KAREN

PHYSICIAN: 44019

NOTES:

PATIENT ID:

SPECIMEN ID:

DOB: 12/22/56 AGE: 45 Years

SEX: Female

FUNGAL RESEARCH GROUP, INC  
ATTN: ECKARDT JOHANNING, MD  
650 WARREN STREET

ALBANY

NY 12208

DRAWN: Not Given  
RECEIVED: 01/26/02 12:49  
PRINTED: 02/01/02 01:50  
FINAL REPORT 02/01/02 01:50  
FINAL

TEST NAME	RESULTS	REFERENCE RANGE
-----------	---------	-----------------

IgG Subclass 1, 2, 3 & 4

IgG Subclass 1	812	mg/dL	(344-966)
IgG Subclass 2	309	mg/dL	(133-622)
IgG Subclass 3	47	mg/dL	(12-139)
IgG Subclass 4	46	mg/dL	(4-117)
IgG Total	1540	mg/dL	(532-2512)

Gilbert Robert, M.D.



# SPECIALTY LABORATORIES

2211 Michigan Avenue      310-828-6543  
Santa Monica, CA 90404-3900 800-421-4449

Case 1:01-cv-00773-YK Document 157-2 Filed 05/16/2003 Page 8 of 64

SPECIALTY # 008-1240802  
CLIENT # 44017

PATIENT NAME: MARRONE, KAREN

PHYSICIAN: 44019

## NOTES:

PATIENT ID:

SPECIMEN ID:

DOB: 12/22/56 AGE: 45 Years  
SEX: Female

FUNERAL RESEARCH GROUP, INC  
ATTN: ECKARDT JOHANNING, MD  
650 WARREN STREET

ALBANY NY 12203

DRAWN:	No. & Given
RECEIVED:	01/12/2021 12:42
PRINTED:	02/01/2021 12:59
FILED:	02/01/2021 12:59

TEST NAME	RESULTS	REFERENCE RANGE
<b>WHITE BLOOD CELL DIFFERENTIATION: GRANULOC &amp; NK CELLS</b>		
Total WBC Count	9.4	$\times 10^9/L$ (4.0-11.0)
Total Lymphs (% of WBC)	27	% (20-40)
Total Lymphocytes (WBC)	2538	/ul (1500-3000)
<b>LYMPHOCYTE COUNT</b>		
% CD3 (Mature T Cells)	69	% (67-87)
Absolute CD3	1751	/ul (1507-1953)
<b>LYMPHOCYTE SUBSETS</b>		
% CD4 (Helper/Inducer)	54	% (32-64)
Absolute CD4	1371	/ul (720-1440)
% CD8 (Cytotoxic/Suppressor)	14	% (14-35)
Absolute CD8	355	/ul (315-782)
CD4/CD8 RATIO	3.9	(0.9-2.5)
<b>B-CELL COUNTING</b>		
% CD19 (Earliest B cell)	85	% (5-22)
Absolute CD19	634	/ul (117-258)

This test is not done in order to determine if a drug or other substance has been cleared or approved by the U.S. Food and Drug Administration. The FDA has determined that such clearance or approval is not necessary. This test is used for clinical purposes. It should

*Albert Dabentl, M.D.*



# SPECIALTY LABORATORIES

2211 Michigan Avenue 310 • 828 • 6543  
Santa Monica, CA 90404 800 • 421 • 4449

Case 1:01-cv-00773-YK Document 157-2 Filed 05/16/03 Page 9 of 64

SPECIALTY # 0002-1246808  
CLIENT # 44019

PATIENT NAME: MARRONE, KAREN

PHYSICIAN: 44019

## NOTES.

PATIENT NO.

SPECIMEN 12

DOB: 12/22/56 AGE: 45 Years  
SEX: Female

DRAWN:  
RECEIVED:  
PRINTED:  
F.I.D.A., W.F.P.C. 19  
Not Given  
01/26/02 12:40  
02/01/02 08:59  
02/01/02 12:00

TEST NAME

## RESULTS

### PREFERENCE RANGE

10. The laboratory must be connected to a computer system to perform high complexity clinical laboratory testing.

19. *Leucosia* *leucostoma* *leucostoma* *leucostoma* *leucostoma* *leucostoma*

WEDNESDAY, NOVEMBER 11, 1970  
PREGNANCY AND EXPOSURES TO HUMIC SUBSTANCES  
IN THE ENVIRONMENT

## TEST: LYMPHOCYTE MITOGEN PROLIFERATION ANALYSIS BY FLOW CYTOLOGY

REPORT COMPLETED PLEASE FILL

19. *Scutellaria galericulata* L. - *Scutellaria galericulata* L. - *Scutellaria galericulata* L.

Saint Paulin (May)

Eckardt Johanning, M.D. M.Sc.  
Occupational and Environmental Life Science

650 Warren Street (Medical Arts Building)

Albany, N.Y. 12208

Phone: (518) 459 3336 Fax: (518) 459 4646

TAX ID # 14-1813653 NY STATE LICENCE 175278-1

Board Certified in:  
Occupational and Environmental Medicine  
Family Medicine

GUARANTOR/PATIENT NAME AND ADDRESS		PATIENT NO.	PATIENT NAME			WC NO.	EXAM DATE
			<i>Matthew Marcone</i>				<i>1/17/02</i>
		DATE OF BIRTH	TELEPHONE NO.	INSURANCE			
		<i>7/29/62</i>	<i>417-533-5523</i>	CODE	DESCRIPTION	CERTIFICATE NO.	

SS:

OFFICE SERVICES	V	CODE	FEES	PROCEDURES	V	CODE	FEES	OFFICE LAB Cont.	V	CODE	FEES	DIAGNOSIS	V	CODE
NEW PATIENT				EKG		93000		NEBULIZER		94664		RESPIRATORY		
COMPREHENSIVE VISIT		98205		EAR Audiometry				CHOLINESTERASE		V80		LARYNGITIS/TRACHEITIS acute		454
EXTENDED VISIT		99204		AUDIOSCOPE		82552						LARYNGITIS/TRACHEITIS chronic		476
INTERMEDIATE VISIT		98203		SPIROMETRY (recording)		94010	46					BRONCHITIS/-ofitis acute		456.0
LIMITED VISIT		98202		SPIROMETRY Pre-Post (record)		94080	65					BRONCHITIS		490
ESTABLISHED PATIENT				PEAK FLOW		94150	5	DIAGNOSIS		V	CODE	ASTHMA extrinsic		493.0
COMPREHENSIVE VISIT		98215		REMOVE FOREIGN BODY EYE		65220		RESPIRATORY				ASThma intrinsic/late onset		493.1
EXTENDED VISIT		98214		URINALYSIS V71.8		81000		COAL WORK ANTHRACOSIS		500		CHRON OBSTR ASTHMA		493.2
INTERMEDIATE VISIT		99213		MICR ALB		82044		ASBESTOSIS		501		ASTHMA/BRONCHITIS (NOS)		493.9
RECHECK VISIT BRIEF		99212		HEMOCCULT		82270	5	PLEURAL PLAQUES		511		PNEUMONIA/PNEUMONITIS		496
MINIMAL SERVICE		99211		VENIPUNCTURE		G0001		SILICA PNEUMOCONIOSIS		502		Extrinsic allergic alveolitis (HP)		496
WORKERS'COMP				VENIPUNCTURE		36415		PNEUMOCON INORGANIC DUST (METAL)		503		Extrinsic allergic alveolitis (HP)		496.8
CONSULTATION								BYSSINOSIS		504		Organic dust (wood, grain, fungi)		
NEWESTABL.												EMPHYSEMA		492
COMPREHENSIVE VISIT		✓ 98245	250	House/Work Services				PNEUMOCONIOSIS unspecified		505		COPD (NOS)		496
EXTENDED VISIT		98244		House call				Chemical fumes & vapors respirat		506		REACTIVE AIRWAY DISEASE		496
INTERMEDIATE VISIT		99243		Limited		99347		PNEUMONITIS SOLIDS/LIQUIDS		507		DYSPNOE		706.0
RECHECK VISIT BRIEF		99242		Intermediate		99348		RADIATION PNEUMONITIS		508		COUGH		706.2
MINIMAL SERVICE		99341		Complex		99349		RESTRICTIVE LUNG DISEASE		518.8				
DIAGNOSIS HEENT	V	CODE		MUSCULOSKELETAL	V	CODE		SKIN				NEUROLOGIC Cont.		CODE
SINUSITIS acute NOS		461.1		JOINT DISORDER unspecified		719.9		ACNE		706.1		PTSD		309.8
SINUSITIS chronic		473.9		LUMBOSACRAL STRAIN/LUMBAGO		724.2		HIVE REACTION		708.9		ORGANIC BRAIN SYNDROME		310
RHINITIS allergic		477.9		SCIATICA		724.3		CONTACT DERMATITIS/ECZEMA		692				
RHINITIS chronic		472.0		BACKACHE unspecified		724.5		CD - OIL		692.1				
OTITIS MEDIA		382.3		OTHER BACK SYMPTOMS		724.6		CD - SOLVENTS		692.2		MISCELLANEOUS		
NASOPHARYNGITIS chronic		472.2		ACUTE CERVICAL STRAIN		847.0		CD - OTHER CHEMICALS		692.4		VIRAL SYNDROME		079.9
PHARYNGITIS		462		CERVICAL REGION, OTHER DISORDER		723.		CD - METALS		692.6		DIABETES		250.0
CONJUNCTIVITIS		372.0		TENDINITIS		726.90		CD - NOS		692.9		ANEMIA		285.8
UPPER RESP TRACT		478.8		BURSITIS		727.2		ONYCHOMYCOSIS		110.1		OBESITY		278.0
HYPERSENSIT.														
OTHER DISEASE NASAL CAVITY		478.1		(FIBRO) MYALGIA AND MYOSITIS		729.1		ATOPIC DERMATITIS		691		LACERATION		879.9
NOISE INDUCED HEARING LOSS		386.12		KNEE PAIN		719.46		URTICARIA		706		FATIGUE		780.7
HEARING LOSS (sensorineural)		369.1		EPICONDYLITIS, LATERAL		728.32		RASH OTHER NONSPECIF LESION		782.1		PAIN GENERALIZED		780.9
CARDIOVASCULAR				SHOULDER PAIN		719.41		NEUROLOGIC				NUMBNESS, TINGLING		782.0
ARRHYTHMIA		427.9		CHEST PAIN		786.50		TOXIC ENCEPHALITIS		323.7		LIVER FUNCTION TEST ABNORMAL		790.4
CHF		428.0		DeQUERVAIN'S TENDINITIS		727.04		ENCEPHALOPATHY unspecified		348.3		ELEVATED IMMUNOGLOBULINS		790.9
HYPERTENSION		401.1		MUSCLE SPASM		728.85		TOXIC ENCEPHALOPATHY (SOLVENT)		349.8		LEAD POISONING		984.9
PERIPHERAL VASCULAR DISEASE		443.9		SPRAIN AND STRAIN OF JOINTS		840-		NERVE ROOT /PLEXUS DISORDER		353		MERCURY TOXICITY		985.0
EDEMA		782.3		RHEUMATISM		728		MONONEURITIS UPPER LIMP		354		ARSENIC TOXICITY		
CAD		414.9		SYNOVITIS AND TENOSYNOVITIS		727.0		CARPAL TUNNEL SYNDROME		354.0		CADMIUM TOXICITY		985.5
HYPERCHOLESTEROLEMIA		272.0						ULNAR NERVE LESION		354.2		METAL FUME FEVER		985.8
GASTROINTESTINAL								MONONEURITIS / ENTRAPMENT		355.9		POLYMER FUME FEVER		987.8
ABDOMINAL PAIN		789.00						POLYNEUROPATHY toxic reaction		357.7		FORMALDEHYDE SENSITIZATION		985.2
GASTRITIS		535.50						DEPRESSION		311		CHEMICAL SENSITIZATION		985.3
GASTROENTERITIS		009.0						SEIZURE DISORDER		345		NEEDLESTICK INJURY		988.2
VIRAL		008.8						SITUATIONAL STRESS		309.9		BURN		940.9
RECTAL BLEEDING		569.3						ADD		314		TOXIC EFFECT OF AFLATOX / MYCOTOX		989.7
IRRITABLE BOWEL/DIARRHEA		558.9						HEADACHE		784.0		TOXIC EFFECT OF PESTICIDES organoph.		989.3
HEMORRHOIDS		455.6						MIGRAINE HEADACHE		346.9		RADIATION EFFECT		200
ESOPHAGEAL REFLUX		530.11						ANXIETY SYMPTOMS		300.0		ALLERGY UNSPECIFIED		985.3

Other DIAGNOSIS / Remarks:

*Thurston f*DR. SIGNATURE *E. J. G.*THIS COPY FOR INSURANCE USE: ATTACH TO CLAIM FORM AND FORWARD TO  
INSURANCE COMPANY. IF RECEIPTED FORM IS REQUIRED PLEASE RETURN WITH SELF-ADDRESSED STAMPED  
ENVELOPE.

		INSURANCE	PATIENT
		TODAY'S CHARGES	
		PAID ON ACCOUNT	
		CHECK CASH ADJ.	
		<i>250</i>	
		<i>250</i>	
		<i>ck 3018</i>	
		TOTAL DUE <i>-0-</i>	

DISABILITY - PARTIAL D. @ RETURN TO WORK: DATE  
TOTAL D. @

THIS IS THE ONLY ITEMIZED RECEIPT THAT WILL BE ISSUED FROM OUR OFFICE.



# SPECIALTY LABORATORIES

2211 Michigan Avenue  
Santa Monica, CA 90404

800-421-4449

Client / Specialty Account Billing

Check Box for Patient or Third Party Billing (Signature required below).

Patient  Insurance  Medicare / Medicaid / Cal

44019-1 FUNGAL RESEARCH GROUP, INC

ATTN: ECKARDT JOHANNINE, RD

650 WARREN STREET

PLEASE PRINT

ALBANY NY 11203 5192250829

T NAME <i>Maccone</i>	(Last) <i>Vida</i>	(First)	(MI)	Sex M <input checked="" type="radio"/> F <input type="radio"/>	PATIENT ADDRESS 11673 Highway RR	(Street Address & Lot #)		
DATE OF BIRTH 5/5/84	AGE	RACE	PATIENT SOC SEC # 193 - 64 - 5277	(City) Dixon	(State) IL	ZIP 65459		
PATIENT ID# 57584	SPECIMEN ID#	DRAW DATE	DRAW TIME AM PM	PATIENT PHONE 573-759-3620	DIAGNOSTIC CODES (ICD-9) (also see below)			
PHYSICIAN NAME (Last) Physician Previous Specimen #		(First)	(MI)	UPIN#	INSURANCE NAME			
CLIENT REPORT NOTE (25 Character Max)		PATIENT INFO/CLINICAL DIAGNOSIS			Address	City	State	Zip
					SUBSCRIBER NAME	RELATIONSHIP		<input type="checkbox"/> Self <input type="checkbox"/> Spouse <input type="checkbox"/> Dependent
					GROUP POLICY #	SUBSCRIBER/MEDICARE/MEDICAID #		
Patient Signature Required for Third Party Billing I authorize release of any medical or other information necessary to process my claim and authorize payment of my medical benefits to Specialty Laboratories.					Advance Beneficiary Notice Medicare (see back of form)			
Signature _____ Date _____					1. Do any of the tests you ordered require Advance Beneficiary Notification? yes <input type="checkbox"/> no <input type="checkbox"/> If "no", no further action required.			
					2. Is there a signed ABN? yes <input type="checkbox"/> no <input type="checkbox"/> If yes, please attach signed ABN form			
Call/Fax Results to:		Specimen Type/Source			Temp (A/R/F)	# Tubes	Total Tests	

Write in test code #, test name, ICD-9 code or additional information below.

- 1670 Additional Surface Marker
- 5110 CBC, Platelet & Diff
- 5302 GGT
- 5318 Hepatic Function Panel
- 1623 IgG Subclasses 1,2,3, & 4
- 5452 Lactate Dehydrogenase
- 1668 Lymph Enum, Basic&NK Cell
- 1050 Lymph Mito Prolif Anal
- 5200 Urinalysis

## repeatedly Requested Assays & Evaluations

Test Code	Test/Evaluation Name	Specimen	Test Code	Test/Evaluation Name	Specimen	Test Code	Test/Evaluation Name	Specimen
<input type="checkbox"/> 2419	AFB Culture & Stain	++	<input type="checkbox"/> 1966	Factor V (Leiden) Mutation	WBe-a	<input type="checkbox"/> 3446	Lipoprotein (a) [Lp(a)]	S-
<input type="checkbox"/> 3110	AFP Triple Screen	S	<input type="checkbox"/> 1440	Fetal Fibronectin	SWB+r	<input type="checkbox"/> 1911	Lupus Anticoagulant (DRVVT)	PLc
<input type="checkbox"/> 3109	AFP Tumor Marker <input type="checkbox"/> 3109SR ±	S	<input type="checkbox"/> 3174	Follicle-Stimulating Hormone	S	<input type="checkbox"/> 1655	Lymph. Enum. T cell <input checked="" type="checkbox"/>	WBa&e-
<input type="checkbox"/> 1000	ANALyzer™	S	<input type="checkbox"/> 5322	Fungus Culture and Stain †	++	<input type="checkbox"/> 1657	Lymph. Enum. Helper/Suppressor <input checked="" type="checkbox"/>	WBa&e-
<input type="checkbox"/> 1866	ANCA (PAN-ANCA™) Evaluation <input checked="" type="checkbox"/>	S	<input type="checkbox"/> 3364	Gabapentin	S	<input type="checkbox"/> 8776	Measles IgG Abs	
<input type="checkbox"/> 3114	Angiotensin Converting Enzyme	S	<input type="checkbox"/> 1266	Gliadin IgG/IgA Abs <input checked="" type="checkbox"/>	S	<input type="checkbox"/> 3496	Methylmalonic Acid	Si
<input type="checkbox"/> 1100	Antinuclear Antibodies (ANA)	S	<input type="checkbox"/> 7761	Helicobacter pylori IgG Abs <input checked="" type="checkbox"/>	S	<input type="checkbox"/> 3442	Microalbumin, Urine	
<input type="checkbox"/> 1122	ANA w/ IU & Titer	S	<input type="checkbox"/> 7741	H. pylori IgG/IgM/IgA Abs <input checked="" type="checkbox"/>	S	<input type="checkbox"/> 1102	Mitochondrial Total Autoabs	
<input type="checkbox"/> 1080	Antiphospholipid Syndrome Eval. <input checked="" type="checkbox"/>	S-art/Pc-f	<input type="checkbox"/> 4972	Hemoglobin A1c Quant	WBe-r	<input type="checkbox"/> 1055	Multiple Sclerosis Eval <input checked="" type="checkbox"/>	C/
<input type="checkbox"/> 8941	Borrelia burgdorferi IgG/IgM Abs	S	<input type="checkbox"/> 2464	Hepatitis A, B, C Eval	S	<input type="checkbox"/> 9716	Mumps IgG Abs	
<input type="checkbox"/> 3119	CA 15-3 <input type="checkbox"/> 3119SR ±	S	<input type="checkbox"/> 2454	HBV-Surface Ag	S	<input type="checkbox"/> 2361	Ova & Parasite, Routine Exam	STL-a
<input type="checkbox"/> 3120	CA 19-9 <input type="checkbox"/> 3120SR ±	S	<input type="checkbox"/> 2453	HBV Surface Abs, Qual <input type="checkbox"/> 2448 Quant	S	<input type="checkbox"/> 8221	Parvovirus B19 IgG/IgM Abs <input checked="" type="checkbox"/>	
<input type="checkbox"/> 3134	CA27.29 <input type="checkbox"/> 3134SR ±	S	<input type="checkbox"/> 8137	HBV DNA UltraQuant™	S-f	<input type="checkbox"/> 1549	Prealbumin	S-
<input type="checkbox"/> 3121	CA 125 <input type="checkbox"/> 3121 SR ±	S	<input type="checkbox"/> 2446	HCV IgG Abs	S	<input type="checkbox"/> 3836	Protein C Activity	PLc
<input type="checkbox"/> 3371	Cardiolipin IgG/IgM/IgA Autoabs <input checked="" type="checkbox"/>	S	<input type="checkbox"/> 2447B	HCV Abs Confirm RIBA +bands	S	<input type="checkbox"/> 3837	Protein S Activity	PLc
<input type="checkbox"/> 1076	Celiac Disease Eval <input checked="" type="checkbox"/>	S	<input type="checkbox"/> 7473	HCV GenotypR™	PLa-f	<input type="checkbox"/> 3547	PSA, Free/Total <input checked="" type="checkbox"/>	
<input type="checkbox"/> 2927	Chlamydia/Neisseria rRNA <input checked="" type="checkbox"/>	SWB	<input type="checkbox"/> 7516	HCV RNA DetectR™	PLa-f	<input type="checkbox"/> 3943	PTH Intact inc. Total Calcium	S
<input type="checkbox"/> 9430	CMV UltraQuant™	WBe-a	<input type="checkbox"/> 7486	HCV RNA AccuQuant™	PLe-f	<input type="checkbox"/> 4160	Stone-A-Lyzer™	ST
<input type="checkbox"/> 1600	Complement CH50 Funct. Activity	S-f	<input type="checkbox"/> 7576	HCV RNA UltraQuant™ <input type="checkbox"/> 7576SR ±	PLe-f	<input type="checkbox"/> 2386	S. pneumoniae, IgG, 12 sero	
<input type="checkbox"/> 3128	Cortisol	S-f	<input type="checkbox"/> 7480	HIV-1 GenotypR™ PLUS <input checked="" type="checkbox"/>	PLe-f	<input type="checkbox"/> 3234	T3, Free	WE
<input type="checkbox"/> 1535	C-Reactive Protein	S	<input type="checkbox"/> 3016	HIV-1 IgG Abs, reflex <input type="checkbox"/> 3016B bands	S	<input type="checkbox"/> 5948	Tacrolimus	S-
<input type="checkbox"/> 1201	dsDNA Autoabs	S	<input type="checkbox"/> 9874	HIV RNA UltraQuant™ <input type="checkbox"/> 9874SR ±	PLe-f	<input type="checkbox"/> 3248	Testosterone, Free /Total <input checked="" type="checkbox"/>	S-
<input type="checkbox"/> 1580	Electrophoresis, Protein	S	<input type="checkbox"/> 1350	HLA-B27 Typing	WBa-a	<input type="checkbox"/> 3244	Testosterone Total	
<input type="checkbox"/> 1191	Endomysial IgA Autoabs	S	<input type="checkbox"/> 3334	Homocysteine UltraQuant™	S	<input type="checkbox"/> 1016	Thyroid Autoabs <input checked="" type="checkbox"/>	
<input type="checkbox"/> 2211	Epstein-Barr Virus Eval <input checked="" type="checkbox"/>	S	<input type="checkbox"/> 2402	HSV Types 1&2 Culture †	M4	<input type="checkbox"/> 3250	Thyroid Stim. Hormone, 3rd gen	
<input type="checkbox"/> 1160	Erythropoietin	S-f	<input type="checkbox"/> 3220	Insulin-like GF-1	S-f	<input type="checkbox"/> 8761	Varicella-zoster Virus IgG Abs	
55	Estradiol	S	<input type="checkbox"/> 1623	IgG Subclasses (1-4) <input checked="" type="checkbox"/>	S	<input type="checkbox"/> 2410	Viral Culture †	N
<input type="checkbox"/> 3164	Estrogens, Total	S-f	<input type="checkbox"/> 4861W	Lead, Whole Blood	Trace	<input type="checkbox"/> 3521	Vitamin D, 25-hydroxy	S



# SPECIALTY LABORATORIES

2211 Michigan Avenue 310-828-6543  
Santa Monica, CA 90404-3900 800-421-4449

SPECIALTY # 002-1273229

CLIENT # 44019-114031

PATIENT NAME: MARRONE, VIDA

SPR. DATE: 05/04/02 REC'D DATE: 05/04/02

PHYSICIAN: JOHANNING, ECKARDT

NOTES:

PATIENT ID:

SPECIMEN ID:

DOB: 05/05/84 AGE: 17 Years

SEX: Female

DRAWN: 01/09/02 13:30

RECEIVED: 01/30/02 11:50

PRINTED: 02/04/02 23:30

FINAL REPORT: 02/04/02 23:30

FINAL

TEST NAME	RESULTS	REFERENCE RANGE
IgG Subclasses 1, 2, 3 & 4		
IgG Subclass 1	529	mg/dL (155-1080)
IgG Subclass 2	295	mg/dL (44-495)
IgG Subclass 3	77	mg/dL (0-209)
IgG Subclass 4	21	mg/dL (0-140)
COMPLETE BLOOD COUNT		
WBC	8.5	* 10E9/L (4.0-11.0)
RBC		
Hct		
MCV	97	fL (88-96)
MCH	32	pg (26-34)
MCHC	33	g/dL (31-37)
ERBC	100	* 10E9/L (150-4000)
Leukocyte Differential	12	% (50-75)
Neutrophils	7	% (50-85)
Eosinophils	3	% (< 6)
Lymphocytes	46	% (20-40)
Monocytes	4	% (1-9)
Red Morphology	Noted	



# SPECIALTY LABORATORIES

2211 Michigan Avenue 310-828-6543  
Santa Monica, CA 90404 3900 800-421-4449

SPECIALTY #: 002-1273229

CLIENT #: 44019

PATIENT NAME: MARRONE, VIDA

Specimen ID: Bone Marrow

Specimen Type: Bone Marrow

Physician: JOHANNING, ECKARDT

FUNGAL RESEARCH GROUP, INC  
ATTN: ECKARDT JOHANNING, MD  
650 WARREN STREET

## NOTES:

PATIENT ID:

SPECIMEN ID:

DOB: 03/05/84 AGE: 17 Years

SEX: Female

ALBANY NY 12208

DRAWN: 01/29/02 13:30

RECEIVED: 01/30/02 14:30

PRINTED: 02/04/02 23:30

FINAL REPORT: 02/04/02 23:30

FINAL

TEST NAME	RESULTS	REFERENCE RANGE
<b>LYMPHOCYTE IMMUNOLOGY BASIC &amp; ADV CELLS</b>		
Total WBC Count	8.5 x 10 <sup>9</sup> /L (4.0-11.0)	
Total Lymphs (% of WBC)	46 H % (60-40)	
Total Lymphocyte Count	3910 H /uL (1500-3000)	
<b>CD3</b>		
% CD3 (Mature T Cells)	53 H % (87-87)	
Absolute CD3	3249 H /uL (11507-1953)	
<b>CD4</b>		
Absolute CD4	2008 H /uL (720-1440)	
% CD4 (Cytotoxic/Suppressor)	18 H % (14-35)	
Absolute CD8	704 H /uL (315-768)	
CD4/CD8 Ratio	2.9 H (0.9-2.5)	
<b>CD19</b>		
% CD19 (Earliest B cell)	13 H % (8-22)	
Absolute CD19	508 H /uL (113-4953)	
<b>CD56/CD16</b>		
% CD56/CD16 (Natural Killer Cells)	3 H % (6-16)	
Absolute CD56/CD16	217 H /uL (66-368)	

This test or one or more of its components was developed and its performance characteristics determined by Specialty Laboratories (SL). It has not been cleared or approved by the U.S. Food and Drug Administration. The FDA has determined that such clearance or approval is not necessary. This test is used for clinical purposes. It should

SPECIALTY # 1002-1873229

CLINICAL TEST# 71913342

C88-PATIENT NAME VAMARONE/LVITA

884-LP-CA-002-048-AO, solicited since 884

PHYSICIAN: JOHANNING, ECKARDT

## NOTES:

PATIENT ID:

SPECIMEN ID:

DOB: 05/05/84 AGE: 17 Years

SEX: Female

DRAWN: 01/29/02 13:30

RECEIVED: 01/30/02 14:50

PRINTED: 02/04/02 23:30

FINAL REPORT: 02/04/02 23:23

FINAL

## TEST NAME

## RESULTS

## REFERENCE RANGE

TEST REQUESTED BY INVESTIGATOR: T-CELL MITOGEN PROLIFERATION TEST. THIS TEST IS USED TO DETERMINE THE ABILITY OF THE PATIENT'S IMMUNE SYSTEM TO REACT TO A SUBSTANCE THAT IS KNOWN TO STIMULATE LYMPHOCYTES.

## LYMPHOCYTE MITOGEN PROLIFERATION ANALYSIS

TEST DATE: 01/29/02  
TEST TIME: 13:30  
TEST INDEX: 142 (570)

T-Lymphocyte Nitrogen Proliferation Calculation: 142 (570) mitogen

Stimulated: 142

Unstimulated: 100

Unstimulated: Resting CRN

Log SI of Patient

X Index: 142 (570)

Log SI of Control

This test or one or more of its components was developed and its performance characteristics determined by Specialty Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. The test is determined by the user to be of utility in the diagnosis of disease. This test is not used for therapeutic purposes. It is the responsibility of the physician to determine if this laboratory is certified under the Clinical Laboratory Improvement Amendments of 1988 to perform high complexity clinical laboratory testing.

991

14

U/C

(11-507)



# SPECIALTY LABORATORIES

2211 Michigan Avenue 310-828-6543  
Santa Monica, CA 90404-3900 800-421-4449

CLIENT # 44019

PATIENT NAME: MARRONE, VIDA

STREET: 650 WARREN ST

CITY: ALBANY

STATE: NY ZIP: 12208

PHONE: 518-452-1170

FAX: 518-452-1171

EMAIL: [VIDA@ECKARDT.COM](mailto:VIDA@ECKARDT.COM)

PHYSICIAN: JOHANNING, ECKARDT

NOTES:

PATIENT ID:

SPECIMEN ID:

DOB: 05/05/84 AGE: 17 Years

SEX: Female

FUNGAL RESEARCH GROUP, INC

ATTN: ECKARDT JOHANNING, MD

650 WARREN STREET

ALBANY

NY 12208

DRAWN: 01/29/02 13:30

RECEIVED: 01/30/02 11:50

PRINTED: 02/04/02 23:30

FINAL REPORT: 02/04/02 22:23

FINAL

## TEST NAME

## RESULTS

## REFERENCE RANGE

### HEPATIC FUNCTION PANEL

Albumin	3.9	g/dL	(3.0-4.6)
Bilirubin Total	0.4	mg/dL	(0.3-1.2)
Bilirubin Direct	0.0	mg/dL	(< 0.5)
Alkaline Phosphatase Total	105	U/L	(30-150)
AST (SGOT)	19	U/L	(10-40)
ALT (SGPT)	12	U/L	(7-50)
Protein Total	6.4	g/dL	(5.5-8.2)

### Laboratory Report

We are unable to perform the test requested below because the appropriate specimen has not received. Please refer to our published specimen requirements for the correct specimen. Resubmit a new specimen and order, if possible.

TEST: IMMUNOLOGY #5200

REPORT COMPLETED - PLEASE FILE

Tests Requested:

IGG SUBCLASS 1, 2, 3, & 4, COMPLETE BLOOD COUNT & DIFFERENTIAL,

LYMPHOCYTE ENUMERATION, BASIC & NK CELLS,

LYMPHOCYTE MITOSIS PROLIFERATION ANALYSIS, CBT, HEPATIC FUNCTION PANEL,

CURRENT NOTES: -

## **EXHIBIT “K”**

**MICHAEL G. HOLLAND, MD, FACMT, FACOEM, FACEP  
OCCUPATIONAL AND ENVIRONMENTAL TOXICOLOGY CONSULTING**

Attorney John Flounlacker  
305 North Front Street Sixth Floor  
PO Box 999  
Harrisburg, Pennsylvania 17108  
September 11, 2002

**Re: Marrone, Jack**

Dr. Mr. Flounlacker,

I had the opportunity to examine Jack Marrone in my office at the Lancaster General Health Campus in Lancaster, Pennsylvania on August 21, 2002. He was accompanied by his family as well as their attorney, Gianni Floro, who tape-recorded the entire session. The history and exam were all done in the same room with all family members and Mr. Floro present, and all had input that formed the basis of the history obtained.

My conclusions on this exam, given with a reasonable degree of medical certainty, are that Mr. Marrone's health problems are not due to exposure to the indoor air environment at the residence at 354 Timber Road, Mt. Gretna, Lebanon, PA. Specifically:

- 1) Mr. Marrone claims memory loss that happened when he started abating a moldy environment in the basement of the house on Timber Road. He has more trouble with short-term memory, repetitive questions and tends to give strange answers his family claims. It is not better since he has been out of the house. This clearly is not related to the mold exposures, and likely is related to his PTSD and/ or depression.
- 2) Similarly he complains of severe fatigue, decreased energy, depression and being tired and no ambition. This is not related to mold exposure, and more likely is due to his pre-existing PTSD.
- 3) He also complains of itching on the dorsum of his arms, picking at it and dry itchy skin. Examination reveals he has neurodermatitis (lichen simplex chronicus), a mostly psychological condition caused by chronic scratching. It is not related to any mold exposure.
- 4) He also has a 2.5 cm growth on his adrenal gland, which is not related to this mold exposure.
- 5) He also complains of itchy watery eyes and burning. This happened when he was in the house on Timber Road, and has continued since he moved out. Similarly sneezing spells, 20-30 times each, which has gotten a little better since being out of the house, but still has problems with this. Since these problems persist, they are not related to mold exposure, and are more likely due to his chronic cigarette smoking.
- 6) He also has trouble breathing on and off, and got short of breath when he wore the paper mask when he did the abatement. He claims he never saw a doctor for this shortness of breath, but still complains of trouble breathing even since moving out of the house in question. His medical record documents pulmonary clinic visits for shortness of breath and dyspnea on exertion in 1998, predating any mold exposure in the house in question. This is due to his years of heavy cigarette smoking and the development of COPD (emphysema), and is not due to mold exposure.
- 6) He also complains of sexual dysfunction and depression and doesn't have as much interest in sex. This is not due to his mold exposure and is likely due to depression and PTSD.

**COMPLETE HISTORY AND PHYSICAL EXAMINATION: (history obtained from patient and family interview as well as supplied medical records)**

**ID:** Mr. Marrone is a 56 yo male.

**CC:** Various health effects due to mold exposure

**HPI:** Mr. And Mrs. Marrone state that they bought a home at 354 Timber Road in Lebanon, PA in August of 1999, and lived there until October of 2000. They noticed when they first purchased the home that a piece of pegboard in the basement was discolored and they mentioned this to the home inspector. During their time living in the home they didn't notice any significant health problems until July or August of 2000. At that time, they left the home closed up for a little over a week while they took their son to school in Missouri. When they returned home the entire basement had a "green fuzzy growth" all over the ceiling stucco, the wall paneling, and the pegboard. They did not notice any leaks or any standing water but their attorney showed me some

**NAME: Marrone, Jack  
MICHAEL G. HOLLAND, M.D.  
INITIAL EVALUATION  
PAGE 2**

black and white photocopies of some photographs of these walls. I was unable to make out any details because of the poor quality, but they tell me that these showed a lot of mold growth. They also noticed that it smelled musty, so they called the insurance company. They also notified their real estate agent from whom they purchased the home, who recommended contacting the US Environmental Protection Agency and the State Health Department. The Health Department gave them a list of labs that could perform mold testing, and they eventually hired A2SI to do the environmental testing. They performed swabs and air sampling for about one hour on one single visit to the house on Timber Road in August of 2000. The family tells me that they found Aspergillus and Penicillium as well as Stachybotrys. Mrs. Marrone says that the person from A2SI who performed the testing told her that there could possibly be some health problems from these types of molds. The lab told them that they would get back to them when the results were available. However, about one month later there was no word from A2SI, so Mrs. Marrone telephoned them. She claims that he recommended sealing off the entire lower level, and getting a biohazard team in to perform an abatement of the area. However, her husband was already in the process of ripping out all of the drywall and the paneling. He was told to stop it and seal it off and get out of the area. Mr. Marrone tells me that when he pulled away the paneling from the walls he noticed water-stained blocks at the front of the home. They began moving out immediately that day on September 19, 2000. They packed up their belongings, and moved out completely on October 14, 2000, and have not been back since.

Mr. Marrone complains of memory loss that happened when he started abating the moldy environment in the basement. He states it is not any better since he has been out of the house. He has more trouble with short-term memory, and has trouble answering questions, and sometimes asks repetitive questions and tends to give strange answers, his family claims. In fact, they all laughed and joked about it during the interview, including Mr. Floro. He also complains of fatigue, decreased energy, depression and being tired and no ambition. He states he used to like to work in the yard and always did physical things. Now he has no "oomph". He states this all started after this mold exposure and it has not improved since removal from the exposure.

Mr. Marrone also complains of itching on the skin, mainly on his forearms, which he never had until experiencing this mold exposure at his residence at Timber Road. He states it constantly causes him to pick at his skin. He states he now has dry itchy skin, and this has not improved since moving out of the residence in question. He shows me the areas in question on his forearms and his shoulder. He has not seen a dermatologist for this.

Mr. Marrone had a CT scan done in Missouri and a 2.5 cm mass on his adrenal gland was discovered. It was recommended that he have a repeat CT scan specifically focusing on the adrenal gland to rule out malignancy. He attributes this to his mold exposure as well.

Mr. Marrone also complains of itchy, watery eyes, and burning in his eyes. This happened when he was in the house on Timber Road, and has continued since he has been out of the house. Similarly, he complains of sneezing spells which, when they come on, cause him to sneeze about 20-30 times each attack. He says that it has gotten a little better since being out of the house, but still has problems with this. He also has trouble breathing on and off with exertion, and got short of breath when he wore the paper mask when he performed the abatement in his basement. He states he never saw a doctor for this, but he still complains of trouble breathing even since moving out of the house in question.

He also complains of sexual dysfunction, in that he is depressed and doesn't have as much interest in sex.

**PAST MEDICAL HISTORY:** Mr. Marrone's past medical history is significant for: he is a 100% disabled combat veteran from the Vietnam War, 50% of his disability is from post traumatic stress disorder (PTSD), 30% from chloracne due to Agent Orange exposure, 10% due to a gunshot wound to the finger and he has shrapnel in his leg. He also was diagnosed with COPD, which was discovered 2-3 years ago, and he also has prostate problems, and is on medication for this. He also has a history of diabetes, but not taking medications for this. He denies any history of asthma. There is no history of hypertension.

**RECORD REVIEW:** Review of his VA records shows a pulmonary clinic visit 2/26/1998 for follow-up on .

**NAME: Marrone, Jack  
MICHAEL G. HOLLAND, M.D.  
INITIAL EVALUATION  
PAGE 3**

COPD, sleep apnea. They document a 60 pack-year history of cigarette smoking (1.5 ppd X 40 years) and he had c/o shortness of breath, daily productive cough, and dyspnea on exertion at that time. Another pulmonary clinic visit on 2/25/1999 documents that a sleep study to evaluate his sleep apnea is still pending. He had a clinic visit on 6/29/1998 for epididymitis and prostatitis, with benign prostatic hypertrophy (BPH). He had dermatology clinic visits on 11/20/1998 and 12/7/1998 for chloracne follow-up and evaluation of lesions on his penis. He had a routine clinic visit on 4/16/1999, and this progress note documents his complaints of fatigue, tiredness. It also mentions productive cough. Another note of 5/03/1999 shows he had c/o cough and abdominal pain.

Pulmonary function tests performed on 2/25/1999 reveal a reduced FEV<sub>1</sub>, and reduced FEV<sub>1</sub>/FVC ratio, consistent with COPD. His lung volumes document air trapping, consistent with COPD and emphysema. Repeat PFT's on 1/28/2002 reveal similar obstructive defect. High resolution CT scan of the chest and abdomen done on 4/16/2002 revealed emphysema of the lung apices, with scarring, and some small densities in the left lung that need repeat scanning in 3 months to evaluate stability. The abdomen revealed fatty infiltration of the liver, and the adrenal mass.

Blood tests from 4/16/1999 document the hyperglycemia, but his glycosylated hemoglobin was in the normal range on 10/31/2000. Fungal antibody testing was negative on 2/12/2001.

**MEDICATIONS:** His medications include Terazosin 1 mg p.r.n. for prostate, Minoxidil 10 mg daily, Albuterol and Combivent inhalers.

**PAST SURGICAL HISTORY:** He had a cyst on his scrotum removed in 1997 probably due to Agent Orange exposure.

**SOCIAL HISTORY:** He denies alcohol use. He claims he smokes one pack of cigarettes per day for about 38 years and continues to smoke now. He was a tractor-trailer driver for 25 years and he stopped this in 1993. Prior to that he sold life insurance, and he is currently 100% disabled veteran from the Vietnam War.

**FAMILY HISTORY:** He denies any significant family history.

**PHYSICAL EXAMINATION:** Alert and oriented x 3, no distress, pleasant white male, who appears to be his stated age of 56 years old. HEENT: NCAT. PERRLA. EOMI. There is no nystagmus, no scleral icterus. Ears: TMs clear bilaterally. Nose is clear. Throat clear. Uvula midline. Neck is supple, no meningeal signs, no lymphadenopathy. Chest is clear to auscultation and percussion. There are no rales, wheezes or rhonchi. There is no wheezing with forced expiration. Heart: Regular rate and rhythm without murmurs, gallops or rubs. Abdomen is soft, non-tender, no guarding, no rebound, no masses, no hepatosplenomegaly. Extremities show no cyanosis, clubbing or edema. There are good peripheral pulses. Neurological exam: Cranial nerves II-XII within normal limits. Motor, sensory, station and gait all within normal limits. He is able to walk on his heels and his toes independently. He can hop on each foot, can do a deep knee bend, can bend over and touch his toes. Range of motion of his shoulders, arms and hands are normal. His grip strengths are equal bilaterally. Rhomberg's test is negative. Skin exam shows typical neurodermatitis lesions consisting of granulating, flat, erythematous lesions confined to the dorsum of both forearms bilaterally and also the back of his right shoulder. Close examination of his neck, face and shoulders show no evidence of chloracne. He does have some acne pitting scars on his face, but these appear to be remote. Abdomen: questionably enlarged liver, about 2 cm below the right costal margin and the epigastrium. He was slightly tender to palpation in the epigastrium and in the right upper quadrant. He was also slightly tender in both lower quadrants to palpation but there is no guarding, no rebound and no masses.

**SUMMARY:** Mr. Marrone is a 56-year-old white male who had exposure to a moldy environment in his former residence at 354 Timber Lane in Lebanon, Pennsylvania from August 1999 until October of 2000. He attributes multiple health problems due to this mold exposure. Many of these, specifically memory loss, fatigue, itching on his arms, growth on his adrenal gland and sexual dysfunction are all clearly not related to any mold exposure. In fact his itchy rash on the dorsum of his arms is neurodermatitis, which is caused by continuous scratching of the skin. These lesions then are in a chronic state of healing, and the healing skin tends to itch, which causes people to continue to scratch these areas, setting up a vicious itch-scratch cycle. Mr. Marrone's rashes are in classic locations on the dorsum of the forearms and on the shoulders where patients can easily reach and repetitively scratch.

His symptoms of itchy, watery eyes, burning in the eyes, sneezing spells and trouble breathing can all be

**NAME: Marrone, Jack  
MICHAEL G. HOLLAND, M.D.  
INITIAL EVALUATION  
PAGE 4**

related to his cigarette smoking and his COPD. His medical record from the VA system documents these symptoms of cough and difficulty breathing were present prior to ever moving into the house at 354 Timber Road. People with emphysema (COPD) have decreased exercise tolerance and develop shortness of breath easily with exertion. He developed this lung condition from years of heavy cigarette smoking and not from any mold exposure. Some upper respiratory allergic symptoms can happen with mold exposure in persons who have allergies and are known to be sensitive to these molds. However, there is nothing in the medical record that documents that Mr. Marrone had any of these allergies and therefore I cannot attribute any of these to the mold exposure. The fact that they are still present after removal from the house in question supports that these are not related to the mold exposure.

Mr. Marrone's complaints of memory loss, difficulty concentrating, severe fatigue, depression and loss of interest in sex are not related to mold exposure. He has a 50% disability from the VA for PTSD, and this is most likely the cause of many of these symptoms. Depression related to PTSD can cause fatigue, poor memory, difficulty concentrating and loss of interest in sex. These symptoms are not due to any mold exposure. He also has a history of prostatitis, BPH, and lesions on his penis, which all predate his mold exposure, and could be contributing to his sexual dysfunction. His sleep apnea can also contribute to depression, fatigue, and lack of energy.

There has been a lot of press coverage recently regarding a myriad of health effects allegedly due to "toxic mold" exposure. Popular evening television "news magazine" shows have featured these stories. There is absolutely no credible scientific evidence that this is true. Some physicians are "believers" in this, although they are in a very small minority. They cite the evidence that many of these molds, when grown on appropriate foodstuffs or nutrient agar, have been shown to produce mycotoxins. These mycotoxins are known toxins, and some are considered potential chem-bio warfare agents. Some adverse health effects from these toxins are possible when contaminated food is ingested, or when inhalational exposure occurs to the purified toxins present in biowarfare bombs. They then make the error in logic that because these molds can produce toxins, and the molds are discovered in the homes of people with health problems, then these health problems have to be due to the molds. However, there is NO evidence that mold growing on drywall produces any of these mycotoxins to any significant degree, that they are in a bioavailable form, that it would be airborne in any significant quantity, or that it would be absorbed in any significant amount.

Certain immunocompromised persons, such as transplant recipients on immunosuppressive drugs, advanced AIDS patients, and cancer patients on chemotherapy, have an increased chance of getting a systemic fungal infection because they cannot fight off these fungi like those of us with normal immune systems can. They acquire these infections not due to high exposures, but because of their weakened immune systems. Obviously this does not apply to anyone in the Marrone family.

Molds are ubiquitous in all indoor and outdoor environments on this planet. They are everywhere- in the air, on our clothing, carpets, floors, walls, ceilings, and ductwork- everywhere. They perform a necessary function in the outdoor environment: they help degrade and decompose vegetable matter, such as leaves and trees, which returns nutrients to the soil, so that new plants can grow. This is why molds in outdoor air are higher in certain seasons, mainly springtime, when the snow melts and the leaves from the previous fall are wet and ready to degrade.

Molds need a source of nutrients on which to grow, they require a warm environment, and they need moisture. Water leakage or highly humid environments can promote mold growth, and carpet, drywall, and fiberboard paneling can have sufficient nutrients to support some mold growth. As mentioned above, molds are everywhere, and the right humidity and temperature will cause them to grow on virtually any environmental surface. This has been occurring since man has been living indoors, and continues today. To attribute varied health effects such as memory loss, cognitive dysfunction, visual impairments, neurodermatitis, and sexual dysfunction to exposure to a musty basement, which continues even after exposure ceases, borders on the ludicrous.

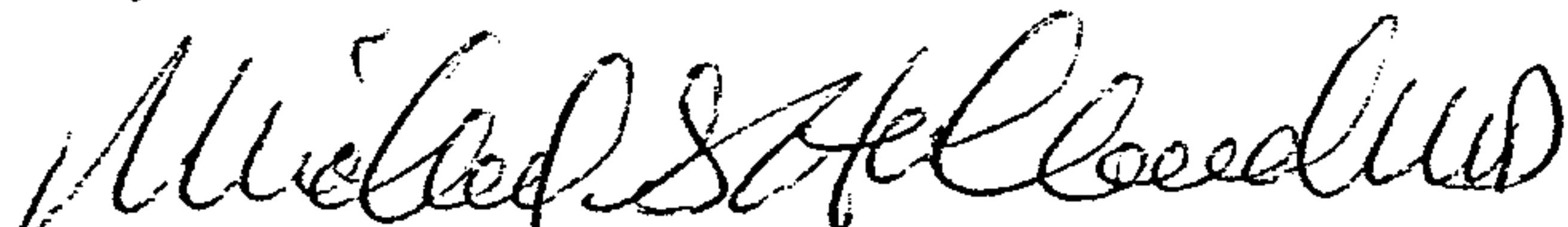
Sir Austin Bradford Hill, in 1965, wrote a landmark article regarding assessing causation of a disease.

NAME: Marrone, Jack  
MICHAEL G. HOLLAND, M.D.  
INITIAL EVALUATION  
PAGE 5

These principles still apply today. Among other criteria, there must be: 1) Strength of Association-the rate of increase in the disease in the population exposed to the purported causative agent; 2) Consistency-association observed by different investigators in different populations; 3) Specificity- the association is limited to people with specific exposures and to particular physiologic systems; 4) Temporality- the exposure precedes the disease; 5) Plausibility- is this exposure plausible, i.e., does it make sense? 6) Coherence- is this association consistent with known facts of the disease? As you can see, these principles are applicable only to allergic symptoms and mold exposures. Cognitive dysfunction, fatigue, poor memory, visual disturbances and other vague, unmeasureable, and purely symptomatic complaints fail to fulfill any of these criteria for a cause and effect relationship with the mold exposure. 1) Strength of Association: Since molds are ubiquitous, these diseases should be commonly seen in the innumerable people who have damp basements, and they aren't. 2) Consistency: No reproducible studies exist proving this association. 3) Specificity: These symptoms are not specific and encompass a multi-organ, multi-system involvement- gastrointestinal, respiratory, neurological, psychiatric, urological, dermatological, visual. 4) Temporality-The "disease" in this case (fatigue, shortness of breath) preceded the exposure, so the exposure couldn't possibly have caused the disease. 5) Plausibility- To propose that exposure to a moldy basement caused these vague, multi-system complaints simply doesn't make any scientific sense. It isn't plausible. 6) Coherence- This association between molds and these symptoms is not consistent with the known facts of the health effects of molds and the allergic symptoms they can exacerbate. Otherwise, we would be forced to believe then that exposure to cat dander and ragweed pollen can cause memory loss, poor cognition, depression, and sexual dysfunction.

The Institute of Medicine (IOM, part of the National Academies of Science) published guidelines in 1988 for confirming the diagnosis of an occupational or environmental illness. These four points include: 1) Are the findings explained by the suspected exposure? 2) Is the chronology appropriate? 3) Is there confirmation of exposure and quantification of the dose? And 4) Are there any other explanations for the illness? The answer to point # 1 is that the findings in this case are not explained by the exposure to the molds. #2 The chronology of the depression due to PTSD, and the dyspnea due to COPD, do not fit- these symptoms preceded the exposure, therefore the exposure could not have caused the illness. #3 There is no quantification of dose. #4 The symptoms and illnesses are adequately explained by other common causes (i.e. cigarette smoking, COPD, PTSD, depression, prostate problems). Therefore one has to conclude that this exposure did not cause these illnesses.

Thank you very much for allowing me to examine this interesting case.

  
Michael G. Holland, MD, FACMT, FACEP, FACP

DATE OF VISIT: 08/21/2002

## **EXHIBIT “L”**

**MICHAEL G. HOLLAND, MD, FACMT, FACOEM, FACEP  
OCCUPATIONAL AND ENVIRONMENTAL TOXICOLOGY CONSULTING**

Attorney John Flounlacker  
305 North Front Street Sixth Floor  
PO Box 999  
Harrisburg, Pennsylvania 17108  
September 11, 2002

Re: **Marrone, Karen**

Dr. Mr. Flounlacker,

I had the opportunity to examine Karen Marrone in my office at the Lancaster General Health Campus in Lancaster, Pennsylvania on August 21, 2002. She was accompanied by her family as well as her attorney, Gianni Floro, who tape-recorded the entire session. You sent my standard six-page questionnaire to Mr. Floro well in advance of the appointment, and requested it be completed prior to their appointment. However, he told me he did not give it to them to fill out until they arrived in the office. Initially Mr. Floro began answering the questions I was asking Mrs. Marrone, but I explained to him that it wasn't an independent exam if the attorney answered the questions and gave the history. I asked him to please only interject to clarify things for his clients. The history and exam were all done in the same room with all family members and Mr. Floro present, and all had input on the history obtained.

My conclusions following this exam, given with a reasonable degree of medical certainty, are that her health problems are not due to exposure to the indoor air environment at the residence at 354 Timber Road, Mt. Gretna, Lebanon, PA. Specifically:

- (1) Mrs. Marrone's complaint of hair loss is not due to exposure to the indoor air environment at the residence in question at 354 Timber Road in Lebanon, PA.
- (2) Mrs. Marrone's abdominal cramping and diarrhea similarly are not related to the exposure to the indoor air environment at the Timber Road Home.
- (3) Mrs. Marrone also complains of dry itching skin, which is not due to that exposure.
- (4) Mrs. Marrone also complains of severe physical fatigue, mental fatigue, trouble with concentration, and loss of cognitive function. She claims that she also has difficulty putting records together and filing and couldn't help her daughter with her math homework, as well as trouble with organizational skills and poor long-term memory. These complaints were present (and documented in her VA records) prior to ever living in the Timber Road home. Therefore, none of these can be attributed to her exposure to the indoor air environment in the house in question.
- (5) Mrs. Marrone claims recurrent sinusitis with cough producing phlegm, and frequent hoarseness of the voice. These problems were present prior to her purchasing the home at 354 Timber Road, and therefore are not due to mold exposure from the house in question.

**COMPLETE HISTORY AND PHYSICAL:** (History obtained from personal interview as well as reviewing supplied medical records)

**ID:** Mrs. Marrone is a 45-year-old white female

**CC:** Multiple health problems due to mold exposure in her former residence.

**HPI:** Mrs. Marrone states that she and her husband bought a home at 354 Timber Road in Lebanon, PA in August of 1999, and lived there until October of 2000. They noticed when they first purchased the home that a piece of pegboard in the basement was discolored and they mentioned this to the home inspector. During their time living in the home they didn't notice any significant health problems until July or August of 2000. At that time, they left the home closed up for a little over a week while they took their son to school in Missouri. When they returned home she states the entire basement had a "green fuzzy growth" all over the ceiling stucco, the wall paneling, and the pegboard. They did not notice any leaks or any standing water but their attorney showed me some black and white photocopies of some photographs of these walls. I was unable to make out any details because of the poor quality, but they tell me that these showed a lot of mold growth. They also noticed that it smelled musty, so they called the insurance company. They also notified their real estate agent from whom they purchased the home, who recommended contacting the US Environmental

**NAME: Marrone, Karen  
MICHAEL G. HOLLAND, M.D.  
IME  
PAGE 2**

Protection Agency and the State Health Department. The Health Department gave them a list of labs that could perform mold testing, and they eventually hired A2SI to do the environmental testing. They performed swabs and air sampling for about one hour on one single visit to the house on Timber Road in August of 2000. The family tells me that they found Aspergillus and Penicillium as well as Stachybotrys. She says that the person from A2SI who performed the testing told her that there could possibly be some health effects from these types of molds. The lab told them that they would get back to them when the results were available. However, about one month later there was no word from A2SI, so Mrs. Marrone telephoned them. She claims that he recommended sealing off the entire lower level, and getting a biohazard team in to perform an abatement of the area. However, her husband was already in the process of ripping out all of the drywall and the paneling. He was told to stop it and seal it off and get out of the area. The husband tells me that when he pulled away the paneling from the walls there were water-stained blocks at the front of the home. They began moving out immediately that day on September 19, 2000. They packed up their belongings, and moved out completely on October 14, 2000, and have not been back since.

Mrs. Marrone complains of multiple health problems that she attributes to this exposure. One of them was hair loss. She noticed that in January of 2000 that some hair had started coming out. She claimed it was so bad that it would clog the sink. It lasted several months and continued even after they left the home. She sought no medical care for this, but did consult with a beauty salon. They recommended she keep her hair long, and use some different hair care products and a different type of brush. She states her hair is now growing back and it is improving since they have been out of the Timber Road house, but it took several months to improve, and claims it isn't back to normal yet.

She also complains of a lot of sinusitis and difficulty breathing, and has had numerous sinus infections, for which she sought medical care at the Lebanon VA as well as the VA in Missouri. (These complaints and problems predate the purchase of the home on Timber Road, ie one in chart from 12/28/1998). Associated with this are a cough, producing phlegm, and postnasal drip. She claims she had been treated with antibiotics multiple times as well without much improvement. When she finally saw an ENT surgeon in Missouri it was discovered that she had mucus retention cyst in the sphenoid sinuses as well as a deviated nasal septum and enlarged turbinates. She had the ENT surgery to reduce the turbinates and remove the mucus cyst and fix the deviated septum in January 2002. She reports that her problems improved greatly after this surgery. She has also quit smoking, and her productive cough has resolved. She also complained of fevers, related to the sinusitis, which stopped when she moved out of the home on Timber Road in October 2000, although her VA record documents episodes prior to 1999.

She also complains of abdominal cramping and diarrhea that were present only while she lived in this home in question in Lebanon, and when they moved out this stopped completely. She also had complained of dry itching skin that stopped after moving out of the home. She tells me also that she had hoarseness of the voice that would occur as soon as she was in contact with any of the air from the basement, either by walking by the basement door when it was open or when she would launder her husband's clothing after he had been removing drywall from the basement. This lasted sometimes for days afterward or sometimes just for an hour, then her voice would come back. She claims this all stopped when she moved out of the house in question. Review of her VAMC record of 1/19/1999 reveals hoarseness that starts on day five after her weekly Avonex injection; it lasts until the next shot, and clears up within 17 minutes after the next Avonex injection. Similarly she was evaluated on 3/22/99 (these visits predate her purchase of the home on Timber Road) at the ENT clinic for hoarseness in the voice and choking that resolved with Avonex injection. She was referred to Speech Pathology, and they confirmed this history, but she no-showed for her video recording evaluation. An evaluation in neurology clinic on 10/01/99 reveals she complained of hoarseness in the voice when weekly Avonex dose is wearing off, at about the fifth day. The doctor felt there was no explanation for this other than possible vocal cord spasticity.

She also complains of severe fatigue and mental fogging, trouble with concentration, loss of cognitive function and trouble with long-term memory. She had trouble putting house records together and filing. She had trouble concentrating and "getting together" with her organizational skills. She couldn't help her daughter with her math homework. This has greatly improved since she moved out of this home in question but she

NAME: Marrone, Karen  
MICHAEL G. HOLLAND, M.D.  
IME  
PAGE 3

states it is not completely gone. Review of her VAMC records reveals a visit to the neurology clinic on 8/7/98 for fatigue, poor memory, dizziness, incontinence, and loss of voice. There was also an evaluation in neurology clinic on 9/15/98 for fatigue, pain, and depression, which predates her purchase of the house on Timber Road. She was treated with Ritalin and Avonex, and was improved on follow-up exam 10/16/98. Repeat evaluation 11/20/98 still c/o fatigue and wanting Avonex q 5 days instead of weekly. An evaluation in neurology clinic on 10/01/99 reveals she complained of difficulty with memory and forgetfulness, labile emotions, and on Prozac for a number of years for this.

**PAST MEDICAL HISTORY:** Her past medical history is significant for multiple sclerosis, which was diagnosed in 1997. She occasionally needs a wheelchair and a lift but she is currently in remission. She has been on Interferon Alfa injections weekly or every five days but these have stopped because she is currently in remission. She also has a history of gastric ulcer disease in 1976, was treated medically. She has a history of asthma that started with smoke exposure from a wood-fired stove she had in her home in Missouri. When they got rid of the wood-burning stove, her asthma went away. Her past medical history is also significant for psychiatric and psychological problems for which she declines to discuss in the office today. VA records document depression, marital difficulties and she was separated at one point.

She also has a history of multiple gallbladder attacks and abdominal pain and finally had a laparoscopic cholecystectomy in May of 2000, and these symptoms have since resolved completely. There is no history of heart disease but she did have an evaluation of chest pain and had a Persantine-Thallium stress test that was negative. She denies any history of COPD or emphysema. No history of hypertension or diabetes mellitus. There was some question of lupus in the past, but her ANA and SPEP were normal.

**Allergies:** She is allergic to Penicillin. She had it when she was 12 years old and got generalized urticaria, was in critical condition, and had to have multiple Adrenalin shots.

**Medications:** Her medications include Avonex (which she is no longer taking) for the MS, Clonazepam, and Baclofen. She needed Albuterol when she was having sinusitis but since her sinus surgery she has not needed the Albuterol at all.

**Surgeries:** Sinus surgery in 2002, laparoscopic cholecystectomy in May 2000, umbilical herniorrhaphy in 1997 and an incisional herniorrhaphy in 1999 (VA records: umbilical herniorrhaphy 1998, exploratory laparoscopy 1981 for suspected ectopic pregnancy, and T&A in 1973)

**SOCIAL HISTORY:** She denies alcohol use. She claims that she only smokes 1/2 a pack of cigarettes per day for about 30 years, quit for about three or four years during that time, and then quit completely two weeks ago. Her medical records from the VA from 9/30/1999, 2/17/2000, and from 3/7/2002 however document that she smoked two packs per day for 30 years.

**FAMILY HISTORY:** Her family history is significant for alcoholism, cancer, asthma, migraines, rheumatoid arthritis and heart disease. Her mother died from heart disease at age 72 and she has no idea of her father's health or age or whether he is alive or not.

**WORK HISTORY:** She was a food inspector in 1993, which was the last time she worked outside the home, and since then she has been a full time homemaker. She previously worked as a truck driver, Sunday school teacher, electronics worker. She was in the Army and is on 100% disability from the VA. These are from gastric ulcer, the MS, reflux esophagitis and other problems that she is not specific about, but that her VA records indicate psychiatric problems.

**REVIEW OF SYSTEMS:** As above in the HPI.

**PHYSICAL EXAMINATION:** Mrs. Marrone is alert and oriented x 3, no distress. HEENT: NCAT. PERRLA. EOMI. Funduscopic exam is normal. Ears: TM's clear bilaterally. Nose is clear. The nasal passages are patent bilaterally. There is no swelling, erythema, bogging or deformity. Throat is clear, Uvula midline. The examination of her hair reveals there is no alopecia, no patches of hair loss noted. Her hair is dyed a shade of pinkish red. Neck is supple, no meningeal signs or lymphadenopathy. No thyromegaly. Chest is clear to auscultation and percussion. There are no rales, wheezes, or rhonchi. There is no wheezing with forced expiration. Heart: Regular rate and rhythm without murmurs, gallops or rubs. Abdomen: Normoactive bowel sounds, soft, non-tender, no guarding, no rebound, no masses, no hepatosplenomegaly. Extremities show no cyanosis, clubbing or edema. There are good peripheral pulses. Neurological exam shows she is somewhat weak in her lower extremities. However she can walk independently on her heels and her toes and can hop

NAME: Marrone, Karen  
MICHAEL G. HOLLAND, M.D.  
IME  
PAGE 4

on each foot independently. She is able to do a deep knee bend, but I did assist her slightly with these maneuvers. Her gait was steady although slightly wide-based, and she walked around the office to the restroom and in and out without assistance. Her deep tendon reflexes are hyporeflexic in the lower extremities with about 1-2 beats of clonus in both ankles. There was slight incoordination with opposing the thumb to the tip of each finger on the left hand. It was normal on the right. Her grips are equal bilaterally.

**DISCUSSION:** As mentioned in the introduction to this independent medical exam, Mrs. Marrone claims to have had multiple health problems that she attributes to an exposure to the molds, Penicillium, Aspergillus and Stachybotrys in the indoor air in her home at 354 Timber Road in Lebanon, PA from August 1999 to October of 2000. It is my opinion, with a reasonable degree of medical certainty, that none of these health problems are due to the exposure to the indoor air at her home at 354 Timber Road. Specifically the hair loss, the fatigue, trouble concentrating, loss of cognitive function and abdominal pain are all clearly not due to exposure to this indoor air environment.

Her history of sinusitis, cough, phlegm, fevers and hoarse voice are more likely related to her smoking history. Certain people, many of whom have coexistent hay fever and other environmental allergies, are allergic to molds and dusts. When these allergic people are exposed to a heavy load of allergens in the air, they can have an exacerbation of their allergy symptoms. Exposure to moldy indoor air environments can cause upper respiratory symptoms such as sinus congestion, itchy eyes, watery eyes, sneezing, coughing and hoarseness of the voice in persons whom are allergic to these molds. However, these symptoms would resolve when the exposure stopped. There is no documentation anywhere in the medical record that I can discover that shows that Mrs. Marrone is allergic to molds, or even had any testing for allergies to molds (She did have some mold and fungi antibody titres, which were negative). In fact, she specifically denies hay fever or any environmental allergies.

Her upper respiratory symptoms were due to the structural abnormalities in her nose as well as her heavy cigarette smoking, and indeed, her cough with phlegm production predated her residing in the home in question. She finally saw an ENT surgeon and was discovered to have sinusitis, sphenoid sinus mucus retention cyst, enlarged turbinates and a deviated nasal septum. These symptoms all continued until she had nasal surgery in January of 2002, when she had complete resolution of all her sinus troubles: No infections, no trouble breathing, and no cough. Similarly she also has quit smoking now and her symptoms have abated. This shows that her problems with her sinuses and the upper respiratory system were related to her structural problems in her nose (which lead to requiring nasal/sinus surgery) and her many years of heavy cigarette smoking, and aren't related to mold exposure in the house at Timber Road.

The mental fogging, trouble concentrating, fatigue, and memory loss all were present and evaluated by physicians prior to purchasing the home at 354 Timber Road. These symptoms are most likely related to her MS and her depression, but clearly are not related to her mold exposure.

There has been a lot of media coverage recently regarding a myriad of health effects allegedly due to "toxic mold" exposure. Popular evening television "news magazine" shows have featured these stories. There is absolutely no credible scientific evidence that this is true. Some physicians are "believers" in this, although they are in a very small minority. They cite the evidence that many of these molds, when grown on appropriate foodstuffs or nutrient agar, have been shown to produce mycotoxins. These mycotoxins are known toxins, and some are considered potential chem-bio warfare agents. Some adverse health effects from these toxins are possible when contaminated food is ingested, or when inhalational exposure occurs to the purified toxins present in biowarfare bombs. The error in logic is then made that because these molds can produce toxins, and the molds are discovered in the homes of people with health problems, then these health problems have to be due to the molds. However, there is NO evidence that mold growing on drywall produces these mycotoxins to any significant degree, that they are in a bioavailable form, that it would be airborne in any significant quantity, or that it would be absorbed in any significant amount.

Certain immunocompromised persons, such as transplant recipients on immunosuppressive drugs, patients with advanced HIV disease, and cancer patients on chemotherapy, have an increased chance of getting a

**NAME: Marrone, Karen  
MICHAEL G. HOLLAND, M.D.  
IME  
PAGE 5**

systemic fungal infection because they cannot fight off these fungi like those of us with a normal immune system can. They acquire these infections not due to high exposures, but because of their weakened immune systems. Obviously this does not apply to anyone in the Marrone family.

Molds are ubiquitous in all indoor and outdoor environments on this planet. They are everywhere- in the air, on our clothing, carpets, floors, walls, ceilings, and ductwork- everywhere. They perform a necessary function in the environment: they help degrade and decompose vegetable matter, such as leaves and trees, which returns nutrients to the soil, so that new plants can grow. This is why molds in outdoor air are higher in certain seasons, mainly springtime, when the snow melts and the leaves from the previous fall are wet and ready to degrade.

Molds need a source of nutrients on which to grow, they require a warm environment, and they need moisture. Water leakage or highly humid environments can promote mold growth, and carpet, drywall, and fiberboard paneling can have sufficient nutrients to support some mold growth. As mentioned above, molds are everywhere, and the right humidity and temperature will cause them to grow on virtually any environmental surface. This has been occurring since man has been living indoors, and continues today. To attribute varied health effects such as memory loss, cognitive dysfunction, visual impairments, and alopecia to exposure to a musty basement, that continues even after exposure ceases, borders on the ludicrous.

Sir Austin Bradford Hill, in 1965, wrote a landmark article regarding assessing causation of a disease. These principles still apply today. Among other criteria, there must be 1) Strength of Association- the rate of increase in the disease in the exposed population; 2) Consistency- association observed by different investigators in different populations; 3) Specificity- the association is limited to people with specific exposures and to particular physiologic systems; 4) Temporality- the exposure precedes the disease; 5) Plausibility- is this exposure plausible, i.e., does it make sense? 6) Coherence- Is this association consistent with known facts of the disease? As you can see, these principles are applicable only to allergic symptoms and mold exposures. Cognitive dysfunction, fatigue, poor memory, visual disturbances and other vague, unmeasureable and purely symptomatic complaints fail to fulfill any of these criteria for a cause and effect relationship with the mold exposure. Relating these to Mrs. Marrone's case: 1) Strength of Association: Since molds are ubiquitous, these diseases should be commonly seen in the innumerable people who have damp basements, and they aren't. 2) Consistency: No reproducible studies exist proving this association. 3) Specificity: These symptoms are not specific and involve a multi-organ, multi-system involvement- gastrointestinal, respiratory, neurological, dermatological, visual. 4) Temporality-The "disease" in this case preceded the exposure, so the exposure couldn't possibly have caused the disease. 5) Plausibility- To propose that exposure to a moldy basement caused these vague, multi-system complaints simply doesn't make any scientific sense. It isn't plausible. 6) Coherence- This association between molds and these symptoms is not consistent with the known facts of the health effects of molds and the allergic symptoms they can exacerbate. Otherwise, we would be forced to believe then that cat dander and ragweed pollen exposure can cause memory loss, poor cognition, hair loss and abdominal cramping.

The Institute of Medicine (IOM, part of the National Academies of Science) published guidelines in 1988 for confirming the diagnosis of an occupational or environmental illness. These four points include: 1) Are the findings explained by the suspected exposure? 2) Is the chronology appropriate? 3) Is there confirmation of exposure and quantification of the dose? And 4) Are there any other explanations for the illness? The answer to point # 1 is that the findings in this case are not explained by the exposure to the molds. #2 The chronology of the weakness, hoarseness, cognitive difficulties, and sinusitis does not fit-these symptoms all preceded the exposure, therefore the exposure could not have caused the illness. #3 There is no quantification of dose. #4 The symptoms and illnesses are adequately explained by other common causes (i.e. cigarette smoking, MS, depression). Therefore one has to conclude that this exposure did not cause these illnesses.

Thank you very much for allowing me to examine this interesting case.

**NAME: Marrone, Karen  
MICHAEL G. HOLLAND, M.D.**

**IME  
PAGE 6**



Michael G. Holland, MD, FACMT, FACEP, Facoem

**DATE OF VISIT: 08/21/2002**

## **EXHIBIT “M”**

**MICHAEL G. HOLLAND, FACMT, FACOEM, FACEP  
OCCUPATIONAL AND ENVIRONMENTAL TOXICOLOGY CONSULTING**

Attorney John Flounlacker  
305 North Front Street Sixth Floor  
PO Box 999  
Harrisburg, Pennsylvania 17108  
September 11, 2002

**Re: Marrone, Adam Matthew**

Dear Mr. Flounlacker,

Adam Matthew Marrone is a 20-year-old white male who I examined in my office at Lancaster General Health Campus in Lancaster, Pennsylvania on August 21, 2002. He was accompanied by his family as well as their attorney, Gianni Floro, who tape-recorded the entire session. The history and exam were all done in the same room with all family members and Mr. Floro present, and all had input that formed the basis of the history obtained.

I can tell you, with a reasonable degree of medical certainty, that the alleged health problems that Matthew Marrone has experienced are not due to his exposure to the indoor air environment in the house on 354 Timber Road in Lebanon, PA. Specifically:

- 1) He complains of fatigue, sleeping a lot, and still being tired after sleeping until 3-4 PM. He states this is improved somewhat since being out of the house in question. I can tell you definitively that this is not due to any exposures to mold at the house at 354 Timber Road, Lebabnon, PA.
- 2) He claims loss of both short- and long- term memory. This caused him trouble with his studies in school and continues after moving away. This is not due to exposure to molds at the Timber Road house.
- 3) He complains of trouble with his eyesight, blurring vision, burning, watery eyes, which continues now, two years after the exposure to the indoor environment ceased. This is not due to his exposure to molds.
- 4) He complained of some stuffy nose and sinus trouble and runny nose and shallow cough, itchy throat and postnasal drip that all cleared up after leaving the house. Since he has no documented mold allergies, it is impossible to attribute these symptoms to mold exposures. Since he lived in this house with two heavy smokers, this is likely due to environmental tobacco smoke exposure, since it cleared up when he went to school.
- 5) He was diagnosed as possibly asthmatic two months ago when he had a cold with cough for 1.5 months. He has been started on an Albuterol inhaler and the cough has resolved. Since these health problems did not occur while he was in the home, I similarly can't attribute those to the indoor air environment exposure.

**COMPLETE HISTORY AND PHYSICAL EXAMINATION: (History obtained from personal interview of the entire Marrone family, as well as records supplied)**

**ID:** Adam Matthew Marrone is a twenty year old white male.

**CC:** Multiple adverse health effects due to environmental mold exposure.

**HPI:** (Most of the history provided by Mrs. Marrone) Mrs. Marrone states that she and her husband bought a home at 354 Timber Road in Lebanon, PA in August of 1999, and lived there until October of 2000. They noticed when they first purchased the home that a piece of pegboard in the basement was discolored, and they mentioned this to the home inspector prior to purchasing the home. During their time living in the home they didn't notice any significant health problems until July or August of 2000. At that time, they left the home closed up for a little over a week while they took their son to school in Missouri. When they returned home, the entire basement had a "green fuzzy growth" all over the ceiling stucco, the wall paneling, and the pegboard. They did not notice any leaks or any standing water but their attorney showed me some black and white photocopies of some photographs of these walls. I was unable to make out any details because of the poor quality, but they tell me that these showed a lot of mold growth. They also noticed that it smelled musty, so they called the insurance company. They also notified their real estate agent, from whom they purchased the home, who recommended contacting the US Environmental Protection Agency and the State Health Department. The Health Department gave them a list of labs that could perform mold testing, and they

**NAME: Marrone, Adam Matthew**

**MICHAEL G. HOLLAND, M.D.**

**INITIAL EVALUATION**

**PAGE 2**

eventually hired A2SI to do the environmental testing. They performed swabs and air sampling for about one hour on one single visit to the house on Timber Road in August of 2000. The family tells me that they found Aspergillus and Penicillium as well as Stachybotrys. She says that the person from A2SI who performed the testing told her that there could possibly be some health problems from these types of molds. The lab told them that they would get back to them when the results were available. However, about one month later there was no word from A2SI, so Mrs. Marrone telephoned them. She claims that he recommended sealing off the entire lower level, and getting a biohazard team in to perform an abatement of the area. However, her husband was already in the process of ripping out all of the drywall and the paneling. He was told to stop it and seal it off and get out of the area. Mr. Marrone tells me that when he pulled away the paneling from the walls there were water-stained blocks at the front of the home. They began moving out immediately that day on September 19, 2000. They packed up their belongings, and moved out completely on October 14, 2000, and have not been back since.

Matt complains of fatigue, feeling tired and lazy, and sleeping a lot. He states he would still be tired even if he slept until 3 or 4 PM. He states this is improved somewhat since being out of the house in question.

He also complains of memory loss, troubles with both short- and long-term memory. He describes difficulty putting a name to a familiar face, trouble concentrating, and difficulty paying attention in school. This caused him trouble with his studies in school, and continues after moving away, although it is improved.

He complains of trouble with his eyesight, blurring vision, burning, watery eyes, which can happen at any time, and continues now, two years after the exposure to the indoor environment ceased. He states this occurs mostly when driving or watching television, and not while reading.

He complained of some stuffy nose and sinus trouble and runny nose and shallow cough, itchy throat and postnasal drip that all cleared up after leaving the house. He denies allergies or hay fever. He is a non-smoker.

He was diagnosed as possibly asthmatic two months ago when he had a cold with cough for 1.5 months. He was started on an Albuterol inhaler and the cough has resolved. He now only has to use the Albuterol as needed. He has only needed it one time in the past two weeks. There are no medical records of this in the packet that was sent to me.

**PAST MEDICAL HISTORY:** He has knee problems, questionable arthritis. He was hospitalized when he was age 6 or 7 for fever and dehydration at Lancaster General Hospital. He has had no hospitalizations since. He denies any other significant past medical history.

**ALLERGIES:** No significant allergies.

**MEDICATIONS:** He uses Albuterol p.r.n. as his only medication.

**SOCIAL HISTORY:** He denies alcohol use. He denies tobacco use. He smoked as a teen with some friends but never regularly and does not smoke now. Recently married, currently a student in college.

**FAMILY HISTORY:** Significant for alcoholism, cancer, asthma, migraines, seizures, psychological disorder, rheumatoid arthritis and heart disease.

**REVIEW OF SYSTEMS:** He complained of fatigue in the past. No skin problems. Past sinus and throat problems that resolved. Blurred vision and decreased vision and eyelid twitching and itchy eyes are still present, difficulty breathing with minimal exertion at present. He states he's had heartburn and indigestion past and present. Also muscle twitching in the past and present, and currently with the memory loss and the loss of concentration.

**PHYSICAL EXAMINATION:** Alert, pleasant white male in no distress. HEENT: NC, AT. PERRLA. EOMI. Funduscopic exam normal. Ears: TMs clear. Nose clear. Throat clear. Uvula midline. There is slight lymphoid vesicles noted in the posterior pharynx but there is no erythema, swelling or exudate. Nasal mucosa are clear. There are no discharges. Neck is supple, no meningeal signs, no lymphadenopathy. Chest clear to auscultation and percussion. There are no rales, wheezes or rhonchi and there is no wheezing with forced expiration. Heart: Regular rate and rhythm without murmurs, gallops or rubs. The abdomen is soft. He has slight abdominal tenderness to palpation in the left mid-abdomen and the right lower quadrant. There is no

**NAME: Marrone, Adam Matthew**

**MICHAEL G. HOLLAND, M.D.**

**INITIAL EVALUATION**

**PAGE 3**

guarding, no rebound and there are no masses or hepatosplenomegaly. Extremities show no cyanosis, clubbing or edema. There are good peripheral pulses. Cranial nerves II-XII within normal limits. Motor, sensory, station and gait all within normal limits. He can walk on his heels and his toes independently and he can hop on each foot independently. He can bend over and touch his toes and he can do a deep knee bend. Range of motion of shoulders, arms and hands are normal. His fine motor coordination is normal, and his grip strengths are equal bilaterally. Romberg's test is negative.

**ASSESSMENT:** Matthew Adam Marrone is a 20-year-old white male who states he was exposed to molds in the indoor air environment in his home at 354 Timber Road, Lebanon, PA. He alleges multiple health complaints due to this exposure.

He claims he had upper respiratory symptoms of stuffy nose, sinus trouble, runny nose, itchy throat, postnasal drip, and shallow cough while in that home. There were apparently no MD visits for this, and the only medical record available to me is for a subcutaneous abscess. This all cleared up as soon as he left the house and has not had trouble with this since. Certain people, most of whom have coexistent hay fever and other environmental allergies, are allergic to molds and dusts. When these allergic people are exposed to a heavy load of allergens in the air, they can have an exacerbation of their allergy symptoms. There is no documentation anywhere in the medical record that I can discover that shows that Matt Marrone is allergic to molds, or had any testing for allergies to molds. This could just as easily have been due to exposure to environmental tobacco smoke in the home with two heavy smokers. I therefore cannot attribute these purely subjective complaints as having any relationship to mold exposures.

The other health complaints of memory loss and fatigue are not attributable to the exposure to the indoor air environment. This may be due to stress of school and his recent marriage. He also complains of continued burning in the eyes, watery eyes, blurred vision and these come on unrelated to seasons of the year or times of the day but mostly when he is driving or watching TV, not while reading. This suggests that this is due to eyestrain, and he may need corrective lenses. It is clearly not related to the indoor air environment of the home in question. He reports that he was recently diagnosed as asthmatic after a cough of several months duration, which has since resolved. I have no documentation of how this asthma diagnosis was made, no record of this in the packet available to me. Since this occurred a year and a half after leaving this home, it is clearly not related to the exposure.

There has been a lot of media coverage recently regarding a myriad of health effects allegedly due to "toxic mold" exposure. Popular evening television "news magazine" shows have featured these stories. There is absolutely no credible scientific evidence that this is true. Some physicians are "believers" in this, although they are in a very small minority. They cite the evidence that many of these molds, when grown on appropriate foodstuffs or nutrient agar, have been shown to produce mycotoxins. These mycotoxins are known toxins, and some are considered potential chem-bio warfare agents. Some potential health effects from these toxins are possible when contaminated food is ingested, or when inhalational exposure occurs to the purified toxins present in biowarfare bombs. They then make the error in logic that because these molds can produce toxins, and the molds are discovered in the homes of people with health problems, then these health problems have to be due to the molds. However, there is **NO** evidence that mold growing on drywall produces any of these mycotoxins to any significant degree, that they are in a bioavailable form, that it would be airborne in any significant quantity, or that it would be absorbed in any significant amount.

Certain immunocompromised persons, such as transplant recipients on immunosuppressive drugs, advanced AIDS patients, and cancer patients on chemotherapy, have an increased chance of getting a systemic fungal infection because they cannot fight off these fungi like those of us with a normal immune system can. They acquire these infections not due to high exposures, but because of their weakened immune systems. Obviously this does not apply to anyone in the Marrone family.

Molds are ubiquitous in all indoor and outdoor environments on this planet. They are everywhere- in the air, on our clothing, carpets, floors, walls, ceilings, and ductwork- everywhere. They perform a necessary function in the environment: they help degrade and decompose vegetable matter, such as leaves and trees,

**NAME: Marrone, Adam Matthew**

**MICHAEL G. HOLLAND, M.D.**

**INITIAL EVALUATION**

**PAGE 4**

which returns nutrients to the soil so that new plants can grow. This is why molds in outdoor air are higher in certain seasons, mainly springtime, when the snow melts and the leaves from the previous fall are wet and ready to degrade.

Molds need a source of nutrients on which to grow, they require a warm environment, and they need moisture. Water leakage or highly humid environments can promote mold growth, and carpet, drywall, and fiberboard paneling can have sufficient nutrients to support some mold growth. As mentioned above, molds are everywhere, and the right humidity and temperature will cause them to grow on virtually any environmental surface. This has been occurring since man has been living indoors, and continues today. To attribute varied health effects such as memory loss, cognitive dysfunction, visual impairments, and alopecia to exposure to a musty basement, which continues even after exposure ceases, borders on the ludicrous.

Sir Austin Bradford Hill, in 1965, wrote a landmark article regarding assessing causation of a disease. These principles still apply today. Among other criteria, there must be 1) Strength of Association-the rate of increase in the disease in the exposed population; 2) Consistency- association observed by different investigators in different populations; 3) Specificity- the association is limited to people with specific exposures and to particular physiologic systems; 4) Temporality- the exposure precedes the disease; 5) Plausibility- is this exposure plausible, i.e., does it make sense? 6) Coherence- Is this association consistent with known facts of the disease? As you can see, these principles are applicable only to allergic symptoms and mold exposures. Cognitive dysfunction, fatigue, poor memory, visual disturbances and other vague, unmeasureable, and purely symptomatic complaints fail to fulfill any of these criteria for a cause and effect relationship with the mold exposure. In Matt's case: 1) Strength of Association: Since molds are ubiquitous, these diseases should be commonly seen in the innumerable people who have damp basements, and they aren't. 2) Consistency: No reproducible studies exist proving this association. 3) Specificity: These symptoms are not specific and involve a multi-organ, multi-system involvement-gastrointestinal, respiratory, neurological, dermatological, visual. 4) Temporality: No medical evidence of these disorders exists in Matt's case, therefore it impossible to attribute purely subjective symptoms to a particular exposure. 5) Plausibility- To propose that exposure to a moldy basement caused these vague, multi-system complaints simply doesn't make any scientific sense. It isn't plausible. 6) Coherence- this association between molds and many of these symptoms is not consistent with the known facts of the health effects of molds and the allergic symptoms they can exacerbate. Otherwise, we would be forced to believe then that cat dander and ragweed pollen exposure could cause memory loss, fatigue, and visual disturbances.

The Institute of Medicine (IOM, part of the National Academies of Science) published guidelines in 1988 for confirming the diagnosis of an occupational or environmental illness. These four points include: 1) Are the findings explained by the suspected exposure? 2) Is the chronology appropriate? 3) Is there confirmation of exposure and quantification of the dose? And 4) Are there any other explanations for the illness? The answer to point # 1 is that the findings in this case are not explained by the exposure to the molds. #2 The chronology of the sinus congestion, cough, fatigue, memory loss, and loss of eyesight aren't documented anywhere in the medical record, so there is no objective evidence that the exposure preceded the onset of symptoms (One visit to a doctor on 12/7/1999 for an axillary lymph node enlargement due to subcutaneous abscesses is all that is contained in his medical records). No evidence exists for any recurrent sinusitis, visual problems, or shortness of breath. #3 There is no quantification of dose. In fact, Matt was taken to school in Missouri, and when the family returned home from that trip, they noticed the mold overgrowth in their basement. They tell me their health effects occurred after that exposure. So Matt would not have even been exposed to these excess molds, and therefore it could not be the cause of his health effects. #4 The symptoms and illnesses are adequately explained by other common causes (i.e. passive cigarette smoke exposure in a household of heavy smokers, fatigue due to stress of college course work & recent marriage; visual problems due to eyestrain). Therefore one has to conclude that this exposure did not cause these illnesses.

Thank you very much for allowing me to examine this interesting case.

**NAME: Marrone, Adam Matthew  
MICHAEL G. HOLLAND, M.D.  
INITIAL EVALUATION  
PAGE 5**



Michael G. Holland, MD, FACMT, FACEP, Facoem

**DATE OF VISIT: 08/21/2002**

## **EXHIBIT “N”**

**MICHAEL G. HOLLAND, MD, FACMT, FACOEM, FACEP  
OCCUPATIONAL AND ENVIRONMENTAL TOXICOLOGY CONSULTING**

Attorney John Flounlacker  
305 North Front Street, Sixth Floor  
PO Box 999  
Harrisburg, Pennsylvania 17108  
September 11, 2002

Re: **Marrone, Vida**

Dear Mr. Flounlacker,

I had the opportunity to examine Vida Marrone in my office at the Lancaster General Health Campus in Lancaster, Pennsylvania on August 21, 2002. She was accompanied by her family as well as her attorney, Gianni Floro, who tape-recorded the entire session. The history and exam were all done in the same room with all family members and Mr. Floro present, and all had input that formed the basis of the history obtained.

My conclusions on this exam, given with a reasonable degree of medical certainty, are that her health problems are not due to exposure to the indoor air environment at the residence at 354 Timber Road, Mt. Gretna, Lebanon, PA. Specifically:

- 1) She claims constant fatigue and trouble concentrating, onset while living at the Timber Road residence, and continues to a lesser degree since moving out. This is not due to any mold exposure.
- 2) She also complains of hair loss, which has improved somewhat since moving out. This is not due to the mold exposure.
- 3) She complains of fluctuation in bowel movements, constipation alternating with diarrhea, which have resolved since moving out of the house in question. This is not due to mold exposure at the Timber Road residence.
- 4) She complains of headaches that she thought was due to sinusitis, but have since resolved upon leaving the Timber Road residence. This is also not due to mold exposure at the Timber Road residence.
- 5) She also had dry, itchy skin, which has resolved since she moved. This is also not due to mold exposure at the Timber Road residence.
- 6) Vida tells me that she did have some sinus problems with congestion, bronchitis and sinusitis and excessive coughing and itching and burning eyes. She was treated with antibiotics and saw a doctor once according to the medical record, but she estimates five or six doctor visits for this. These all resolved after moving out of the house. This is likely due to tobacco smoke exposure.

**COMPLETE HISTORY AND PHYSICAL:** (History obtained from personal interview of all Marrone family members, as well as reviewing supplied medical records)

**ID:** Vida Marrone is an 18-year-old white female

**CC:** Multiple health problems due to mold exposure in her former residence.

**HPI:** Vida Marrone's parents bought a home at 354 Timber Road in Lebanon, PA in August of 1999, and the family lived there until October of 2000. They noticed when they first purchased the home that a piece of pegboard in the basement was discolored and they mentioned this to the home inspector. During their time living in the home they didn't notice any significant health problems until July or August of 2000. At that time, they left the home closed up for a little over a week while they took their son to school in Missouri. When they returned home she states the entire basement had a "green fuzzy growth" all over the ceiling stucco, the wall paneling, and the pegboard. They did not notice any leaks or any standing water but their attorney showed me some black and white photocopies of some photographs of these walls. I was unable to make out any details because of the poor quality, but they tell me that these showed a lot of mold growth. They also noticed that it smelled musty, so they called the insurance company. They also notified their real estate agent from whom they purchased the home, who recommended contacting the US Environmental Protection Agency and the State Health Department. The Health Department gave them a list of labs that could perform mold testing, and they eventually hired A2SI to do the environmental testing. They performed swabs and air sampling for about one hour on one single visit to the house on Timber Road in August of 2000. The family

**NAME: Marrone, Vida**  
**MICHAEL G. HOLLAND, M.D.**  
**INITIAL EVALUATION**  
**PAGE 2**

tells me that they found Aspergillus and Penicillium as well as Stachybotrys. She says that the person from A2SI who performed the testing told her that there could possibly be some health problems from these types of molds. The lab told them that they would get back to them when the results were available. However, about one month later there was no word from A2SI, so Mrs. Marrone telephoned them. She claims that he recommended sealing off the entire lower level, and getting a biohazard team in to perform an abatement of the area. However, Mr. Marrone was already in the process of ripping out all of the drywall and the paneling. He was told to stop it and seal it off and get out of the area. The husband tells me that when he pulled away the paneling from the walls there were water-stained blocks at the front of the home. They began moving out immediately that day on September 19, 2000. They packed up their belongings, and moved out completely on October 14, 2000, and have not been back since.

Vida Marrone has multiple complaints that she attributes to this mold exposure, including sinus problems which were associated with congestion, bronchitis and sinusitis and excessive coughing. She had itchy and burning in the eyes with this and she went to Urgent Care in Lebanon several times, was given Keflex and Codeine cough syrup. She claims she went there 5-6 times but the medical record only shows one visit. She states that this resolved for the most part ever since being out of the house after October of 2000. She also complains of constant fatigue and trouble concentrating, and this persists. She states it is somewhat better since leaving the house but it is still present. It is worse while she is in school and she has trouble concentrating. She was getting her GED and she noticed a lot of trouble with studying and trying to take tests. She never saw a doctor regarding the fatigue or trouble concentrating. She also claims that her hair was falling out, and claims she had lost a lot of hair, and there was even a bald spot above the right ear. She never saw a dermatologist or a doctor about it, but they consulted a beauty salon specialist who recommended a boar's hair hairbrush. She was told to keep the hair long and it is growing back and the bald spot is now gone. She also complains of fluctuations in her bowel movements alternating constipation with diarrhea. No doctor visits regarding this, but she states it is gone completely since being out of the home. She had headaches for weeks at a time in the past. She thought it was due to sinusitis but over-the-counter meds would not help it. The headaches were located in the front and the back of her head. They are gone now since they have moved out of the home in question. She also complains of dry itching skin that has resolved ever since moving out of the house. At no time, however, did she have a noticeable rash. She never saw a doctor about this but she used some lotion and moisturizers with some brief relief. She felt like her feet were falling asleep several times when she was in the home in Lebanon, a "pins and needles" feeling. It happened 3 or 4 times while she was in that house and lasted for an hour at the longest. At one time it happened briefly in her hand. She has not had any recurrence of these feelings in her hands or feet since moving out of the house in Lebanon.

**PAST MEDICAL HISTORY:** Negative for any heart disease or heart murmur. No history of asthma, diabetes or hypertension. She did have urinary tract infections last year and 2-3 times during the time she lived in the house in Lebanon. She denies any other significant past medical history. There are no other hospitalizations or operations and no other injuries or illnesses.

**ALLERGIES:** She is allergic to Penicillin and when questioned the mother states that she actually had a rash after given Ampicillin when she was a child and was told that she was allergic and could never take it again.

**MEDICATIONS:** Her medications include in the past Keflex and a Codeine cough syrup but none currently. The Codeine made her nauseated.

**SOCIAL HISTORY:** She never used alcohol. She currently smokes 1/4 to one pack of cigarettes per day for about six months she claims.

**FAMILY HISTORY:** Significant for alcoholism on the mother's side, cancer of the colon in her maternal grandfather, asthma on the mother's side, migraines on the mother's side and a half uncle with epilepsy. Her father has a psychological disorder, maternal grandmother has rheumatoid arthritis and maternal grandmother and maternal grandfather have heart disease.

**REVIEW OF SYSTEMS:** Significant for drowsiness, fatigue, unusual eating habits, dry skin, facial pain and pressure, runny nose, sinus problems and throat discomfort, eye discomfort, dryness, excessive tearing, itchy eyes, glasses. She complains of chest pain and cough with the sinusitis with abdominal pain, constipation, diarrhea and loss of appetite, tingling and numbness, confusion, depression, memory loss and sleeping difficulty and frequent headaches and irregular menses.

**NAME: Marrone, Vida  
MICHAEL G. HOLLAND, M.D.  
INITIAL EVALUATION  
PAGE 3**

**PHYSICAL EXAMINATION:** Alert, pleasant white female in no distress. HEENT: NCAT. PERRLA. EOMI. Ears: TMs are clear bilaterally. Nose is clear. Throat is clear. Uvula midline. Neck is supple, no meningeal signs, no lymphadenopathy. She is slightly tender near her thyroid gland but I don't detect any enlargements or masses. Chest is clear to auscultation and percussion. There are no rales, wheezes or rhonchi. Heart: Regular rate and rhythm without murmurs, gallops or rubs. There is no wheezing with forced expiration. Abdomen is soft, nontender, no guarding, no rebound, no masses, no hepatosplenomegaly. Bowel sounds are normoactive and there is no hyperactivity. Extremities show no cyanosis, clubbing or edema. There are good peripheral pulses throughout. Neurological exam: Cranial nerves II-XII within normal limits. Motor, sensory, station and gait all within normal limits. The deep tendon reflexes are symmetrical. She can walk on her heels and her toes independently, can hop on each foot independently, can do a deep knee bend, can bend over and touch her toes. Range of motion of the shoulders, arms and hands is normal. Grip strength is 5/5. Fine motor coordination is normal and Romberg's test is negative. Skin exam shows she has a tattoo in the small of her back.

**SUMMARY AND CONCLUSION:** Vida Marrone is an 18-year-old white female with multiple medical symptoms that she attributes to exposure to indoor air environment in her former home at 354 Timber Road in Lebanon, Pennsylvania where she lived from August 1999 until September 2000. The health problems including pins and needles in the feet, the dry itchy skin, the headaches, the fluctuation in her bowel movements, the alopecia, and the constant fatigue and trouble concentrating are all clearly not related to this indoor air environment in this house in question, and I say this with a reasonable degree of medical certainty. She does have a history, she states, of sinus problems and congestion and bronchitis that could possibly be associated with indoor air quality problems such as mold, if a person is allergic to these molds. There is no evidence in her medical record that she is allergic to molds, or that any of this was a recurrent problem for her. Since she is a smoker, and there are other smokers in her family, the tobacco smoke exposure puts her at risk for these symptoms.

There has been a lot of media coverage recently regarding a myriad of health effects allegedly due to "toxic mold" exposure. Popular evening television "news magazine" shows have featured these stories. There is absolutely no credible scientific evidence that this is true. Some physicians are "believers" in this, although they are in a very small minority. They cite the evidence that many of these molds, when grown on appropriate foodstuffs or nutrient agar, have been shown to produce mycotoxins. These mycotoxins are known toxins, and some are considered potential chem-bio warfare agents. Some adverse health effects from these toxins are possible when contaminated food is ingested, or when inhalational exposure occurs to the purified toxins present in biowarfare bombs. The error in logic is then made that because these molds can produce toxins, and the molds are discovered in the homes of people with health problems, then these health problems have to be due to the molds. However, there is **NO** evidence that mold growing on drywall produces these mycotoxins to any significant degree, that they are in a bioavailable form, that it would be airborne in any significant quantity, or that it would be absorbed in any significant amount.

Certain immune-compromised persons, such as transplant recipients on immunosuppressive drugs, patients with advanced HIV disease, and cancer patients on chemotherapy, have an increased chance of getting a systemic fungal infection because they cannot fight off these fungi like those of us with a normal immune system can. They acquire these infections not due to high exposures, but because of their weakened immune systems. Obviously this does not apply to anyone in the Marrone family.

Molds are ubiquitous in all indoor and outdoor environments on this planet. They are everywhere- in the air, on our clothing, carpets, floors, walls, ceilings, and ductwork- everywhere. They perform a necessary function in the environment: they help degrade and decompose vegetable matter, such as leaves and trees, which returns nutrients to the soil, so that new plants can grow. This is why molds in outdoor air are higher in certain seasons, mainly springtime, when the snow melts and the leaves from the previous fall are wet and ready to degrade.

Molds need a source of nutrients on which to grow, they require a warm environment, and they need

NAME: Marrone, Vida  
MICHAEL G. HOLLAND, M.D.  
INITIAL EVALUATION  
PAGE 4

moisture. Water leakage or highly humid environments can promote mold growth, and carpet, drywall, and fiberboard paneling can have sufficient nutrients to support some mold growth. As mentioned above, molds are everywhere, and the right humidity and temperature will cause them to grow on virtually any environmental surface. This has been occurring since man has been living indoors, and continues today. To attribute varied health effects such as memory loss, cognitive dysfunction, visual impairments, and alopecia to exposure to a musty basement, that continues even after exposure ceases, borders on the ludicrous.

Sir Austin Bradford Hill, in 1965, wrote a landmark article regarding assessing causation of a disease. These principles still apply today. Among other criteria, there must be 1) Strength of Association- the rate of increase in the disease in the exposed population; 2) Consistency- association observed by different investigators in different populations; 3) Specificity- the association is limited to people with specific exposures and to particular physiologic systems; 4) Temporality- the exposure precedes the disease; 5) Plausibility- is this exposure plausible, i.e., does it make sense? 6) Coherence- Is this association consistent with known facts of the disease? As you can see, these principles are applicable only to allergic symptoms and mold exposures. Cognitive dysfunction, fatigue, poor memory, visual disturbances and other vague, un-measurable and purely symptomatic complaints fail to fulfill any of these criteria for a cause and effect relationship with the mold exposure. Relating these to Vida Marrone's case: 1) Strength of Association: Since molds are ubiquitous, these diseases should be commonly seen in the innumerable people who have damp basements, and they aren't. 2) Consistency: No reproducible studies exist proving this association. 3) Specificity: These symptoms are not specific and involve a multi-organ, multi-system involvement- gastrointestinal, respiratory, neurological, dermatological, visual. 4) Temporality- No clear temporal relationship exists, no medical evidence of alopecia, recurrent bronchitis, memory difficulties. 5) Plausibility- To propose that exposure to a moldy basement caused these vague, multi-system complaints simply doesn't make any scientific sense. It isn't plausible. 6) Coherence- This association between molds and these symptoms is not consistent with the known facts of the health effects of molds and the allergic symptoms they can exacerbate. Otherwise, we would be forced to believe then that cat dander and ragweed pollen exposure can cause trouble concentrating, tingling in the hands and feet, hair loss and abdominal cramping.

The Institute of Medicine (IOM, part of the National Academies of Science) published guidelines in 1988 for confirming the diagnosis of an occupational or environmental illness. These four points include: 1) Are the findings explained by the suspected exposure? 2) Is the chronology appropriate? 3) Is there confirmation of exposure and quantification of the dose? And 4) Are there any other explanations for the illness? The answer to point # 1 is that the findings in this case are not explained by the exposure to the molds. #2 The chronology of the cognitive difficulties, and sinusitis does not fit. #3 There is no quantification of dose. #4 The symptoms and illnesses are adequately explained by other common causes (i.e. cigarette smoke, stress of school work, moving during high school years). Therefore one has to conclude that this exposure did not cause these illnesses.

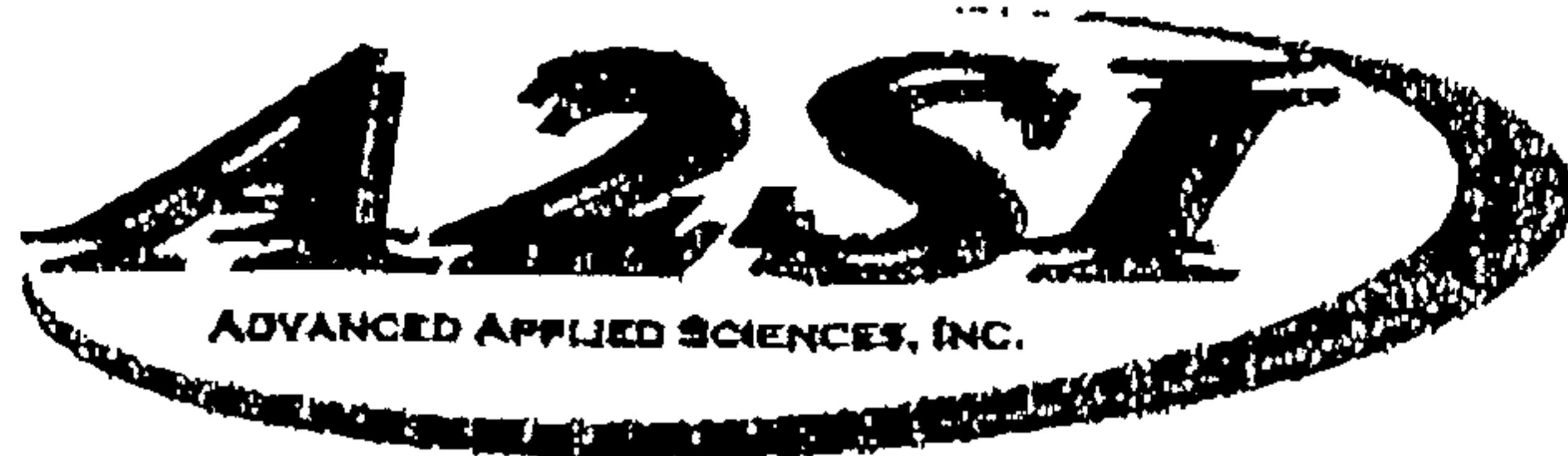


Michael G. Holland, MD, FACMT, FACEP, FACP

DATE OF VISIT: 08/21/2002

MGH/htscq 15599

## **EXHIBIT “O”**



September 12, 2002

**Mr. Jack P. & Karen A. Marrone**  
 11673 Highway PP  
 Dixon, Missouri 64559

**RE: Consultative Services - A2SI Project No. 2134**  
 Litigation Support of Civil Action No. 1: CV-01-0073  
 SUBJECT PROJECT:

Marrone Residence  
 354 Timber Road, (Mt. Gretna)  
 Lebanon, Pennsylvania  
**Addendum to A2SI Project # 2008116**  
**(Original Report Date 10/15/2000)**

Dear Mr. & Mrs. Marrone:

At the request of you and your attorney, Gianni Floro of Tarasi, Tarasi & Fishman, a review of A2SI's earlier project report #2008116 was performed. As an additional support, we reviewed some additional pictures taken in the residence at 354 Timber Road by Mr. Floro, sometime after our original visit on 8/28/2000. In the pictures, more of the basement foundation wall finish (paneling, fiberglass insulation, and black roofing paper) and the ceiling drywall had been removed. These pictures helped to confirm our opinions stated in the original report that the exterior wall treatment was a significant contributor to the moisture and humidity levels in the basement which allowed the fungal growth we identified to grow and multiply.

At the time of our original visit, only a limited amount of wall and ceiling covering had been removed. The more recent pictures show additional discoloration from moisture, of the cement block foundation walls throughout the basement, and possibly from some fungal growth (as was found in sample 82800-002 in the earlier report), as well.

#### COMMENTS

During the many IAQ/IEQ (indoor Air Quality/ Indoor Environmental Quality) surveys and assessments we have performed, we have observed a significant number of basements which had been finished in conventional ways, but should not have been finished due to a variety of limiting factors (circumstances and conditions). These limiting factors range from terrain and topography issues, to foundation type (cement block as opposed to a poured cement foundation), to the condition of the foundation, to

**CORPORATE HEADQUARTERS**  
 4400 LINGLESTOWN ROAD ♦ HARRISBURG, PA. 17112

TELEPHONE: (717) 651-9377  
 FAX: (717) 657-0752

Jack P. & Karen A. Marrone  
Consultative Services  
Marrone Residence, 354 Timber Road, (Mt. Gretna)  
Litigation Support of Civil Action No. 1: CV-01-0073  
A2SI Project No. 2134  
Sept. 12, 2002  
Page 2 of 4

the presence of ongoing leaks or seepage (indicated by efflorescence and staining), to preexisting mold indications, to indications of elevated interior humidity from additional sources such as unvented hot tubs and combinations of these previously mentioned factors. If a home has one or more of these factors, there is a good possibility of moisture problems occurring in this basement, if inappropriate wall finishing methods are used significant mold growth can also become an issue. Based on our assessment, the residence at 354 Timber Road, had all of the limiting factors mentioned above.

## CONCLUSIONS

Moisture that passes through the wall must be allowed to evaporate and be exhausted from the area by normal air exchange, or be removed by dehumidification. Sealing the wall surface by placing a "vapor barrier" or vapor retardant such as black roofing paper against the foundation surface will prevent normal evaporation of water passing through the foundation, so this moisture will build up behind the "vapor barrier" until it begins leak out the bottom of the wall (usually dampening the carpet pad and carpet, if present, which will usually result in mold growth in the carpet, as was also found here) or through seams in the vapor retardant. Excessive amounts of moisture behind this type of vapor retardant (many seams = leak points) will result in elevated humidity levels in the wall cavity and mold growth in the wall cavity. Another moisture source in a wall cavity of this type, is moisture from the humid basement (hot tub, leaking plumbing, humid air coming in from outside) permeating through the paneling, through the insulation and reaching the cool surface of the vapor barrier covered foundation. This moisture is likely to condense and dampen the foundation wall surface and maintain the humidity of the wall cavity and to a lesser degree the wall covering (paneling) to allow mold growth to continue. So, if adequate rain has occurred for ground water to lie against the foundation and to penetrate foundation wall, the moisture will collect in the wall cavity. If rain has not occurred for while but humidity levels are high, the cooler surface of the foundation will still condense moisture which will collect in the wall cavity. Either situation results in moisture which will collect in the wall cavity and produce potential mold growth.

With a reasonable degree of scientific certainty, based on our experience and training, the mold growth in the Marrone residence at 354 Timber Road was a result of the elevated moisture levels in the basement and in the basement wall cavities. These moisture levels were the result of the contributing factors detailed in the COMMENTS section, but primarily were the result of the inappropriately constructed finishing walls of the interior of the foundation trapping moisture that under other circumstances would have simply evaporated away.

Jack P. & Karen A. Marrone  
Consultative Services  
Marrone Residence, 354 Timber Road, (Mt. Gretna)  
Litigation Support of Civil Action No. 1: CV-01-0073  
A2SI Project No. 2134  
Sept. 12, 2002  
Page 3 of 4

## RECOMMENDATIONS

For a basement such as this to be finished, an exterior drainage system and modifications to the landscaping would be suggested parts of the corrective actions required. The simplest but least attractive finishing approach would be to simply paint the foundation block walls with a waterproofing paint and operate a dehumidifier in the basement. A more cosmetic interior treatment would be to put wood studs and insulation up with a tight vapor barrier such as plastic sheeting, on the interior side (towards the room) of the insulation. However, with the amount of moisture potentially passing through the foundation, there is a high probability that moisture levels would still be elevated in the wall cavities, the carpets could still become damp and mold could still grow both in the wall cavities and in the carpet. Operation of one or more dehumidifiers in this basement would improve the situation by reducing the moisture levels present. A third option which we have seen have success in this type of situation is to build the finishing wall several inches from the foundation wall to provide an air space. This space is then ventilated by a small exhaust fan (more than one may be needed) which draws the damp air out of the space and vents it from the house. A further modification would have a dehumidifier in an adjacent area to the wall cavity (utility room or closet) and vent the dehumidified air into the wall cavity to further reduce the humidity level in the wall. A second dehumidifier drying the basement room air would further improve the conditions by reducing vapor loading, humidity levels and consequently, the potential for condensation.

## ADDITIONAL INFORMATION

Mr. Pfleiderer has been qualified as an expert on several occasions, as follows:

- 1985 – expert witness court testimony in a gasoline spill incident;
- 1990 – expert witness court testimony in a case against a laboratory regarding laboratory operations and analytical testing procedures;
- 2001 – expert testimony (deposition) involving indoor air quality, indoor environmental quality, health related issues, in a project with a major Pennsylvania State agency
- 2002 – expert testimony (deposition) in an Alabama case regarding indoor air quality and indoor environmental quality, health related effects, and source identification.

## References

Bioaerosols – Assessment and Control, published by the ACGIH (American Council of Governmental Industrial Hygienists) 1999

Jack P. & Karen A. Marrone  
Consultative Services  
Marrone Residence, 354 Timber Road, (Mt. Gretna)  
Litigation Support of Civil Action No. 1: CV-01-0073  
A2SI Project No. 2134  
Sept. 12, 2002  
Page 4 of 4

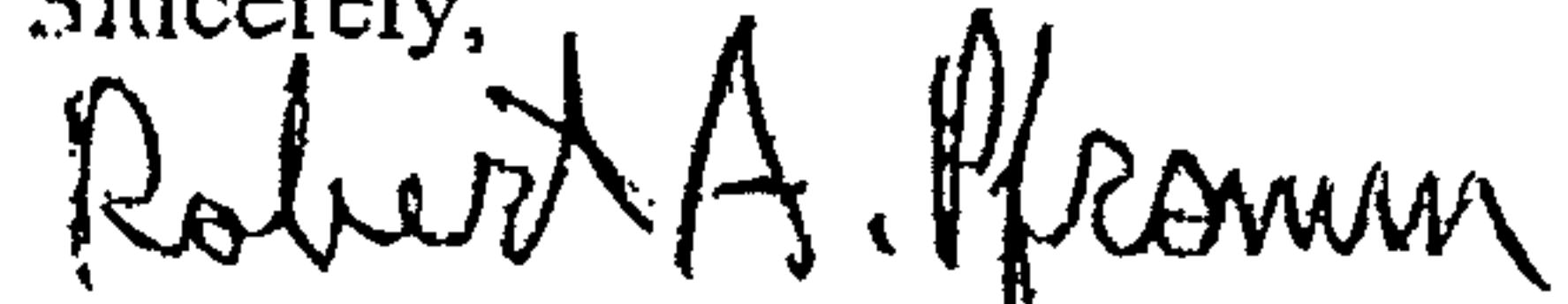
Guidelines for the Determination, Remediation and Prevention of Biological Contamination in Indoor Environments, Professional Development Course (#704) AIHA (American Industrial Hygiene Association) and the ACGIH, 1999 AIH Conference and Exposition

Controlling Moisture and Microbial Problems in Buildings, Professional Development Course, 1999 Mid Atlantic Environmental Hygiene Resource Center

Remediation and Prevention of Biological Contamination in Indoor Environments, Professional Development Course (#706) AIHA (American Industrial Hygiene Association) and the ACGIH, 2001 AIH Conference and Exposition

A2SI was pleased to assist you with this investigation and thank you for the opportunity to submit this Addendum to our previous project..

Sincerely,



Robert A. Pfromm, CIH  
Senior Technical Advisor

Enclosures

**ROBERT A. PFROMM, CIH**  
**SENIOR TECHNICAL ADVISOR**

---

**PROFESSIONAL EXPERIENCE**

**ADVANCED APPLIED SCIENCES, INC.**

**March 1999 to Present**

**SENIOR TECHNICAL ADVISOR**

Mr. Pfromm presently serves as the Senior Technical Advisor for Advanced Applied Sciences, Inc. from which he is primarily responsible for providing technical oversight and supervision in support of our indoor air quality, industrial hygiene, environmental, health and safety projects. Mr. Pfromm also provides training in the areas of indoor air quality and bioremediation.

For more than eighteen years, Mr. Pfromm has worked as an occupational safety and health professional. The American Board of Industrial Hygiene (ABIH) has certified him in the Chemical Aspects of industrial hygiene since 1988. In 1999 Mr. Pfromm tested for and received from the ABIH, the rare sub-specialty certification in Indoor Environmental Quality. In the field of occupational safety and health he has personally performed hundreds of surveys, investigations and assessments over the broad range of that discipline. His experiences have additionally been enhanced by many projects in the province of the environmental sciences; ranging from analyses of environmental air, water and soil samples and laboratory management, to phase 1 auditing, safety and health training, indoor air quality surveys and project management on biological remediation, lead abatement and asbestos remediation. He has had extensive experience interfacing with engineering, architectural, medical and legal professionals, as well as union and employee groups such as teachers unions as they were integral to and associated with these projects.

Mr. Pfromm has worked closely with company & corporate managers and professionals. At the same time he has had to communicate with and establish a working relationship with supervisors, staff, technical personnel, laborers, students and their parents. As a technical trainer, he has taught engineers, chemists, teachers, educational administrators and maintenance and custodial personnel in a variety of occupational and environmental subjects, including Bloodborne Pathogens, Right to Know, Asbestos Awareness and Indoor Environmental Quality Awareness. To function in these capacities, he has had to develop and maintain considerable communication and personnel skills.

**ROBERT A. PFROMM, CIH**  
**SENIOR TECHNICAL ADVISOR**

---

**AMERICAN WESTECH, INC.**

**March 1999 to Present**

**DIRECTOR, INDUSTRIAL HYGIENE SERVICES**

Advanced Applied Sciences, Inc. provides consulting services to American Westech, Inc. as a subcontractor. Mr. Pfromm manages the account and is responsible for achieving and maintaining certification of the laboratory by the American Industrial Hygiene Association (AIHA) and ensuring that the level of training, quality control and performance of the laboratory facility, its operation, and its personnel meet or exceed all applicable AIHA requirements.

Mr. Pfromm is directly responsible for the development and implementation of a sound Quality Assurance (QA) and Quality Control (QC) Program pertinent to the industrial hygiene department of American Westech, Inc.

**INX CORPORATION**

**July 1998 to March 1999**

**DIRECTOR, INDOOR AIR QUALITY SERVICES/  
CERTIFIED INDUSTRIAL HYGIENIST**

Mr. Pfromm marketed, planned, executed, and reported Indoor Air Quality services to a wide range of clients from industry to schools and homeowners. He was also responsible for planning and managing remediation projects based on survey results.

**KARL & ASSOCIATES**

**October 1996 to July 1998**

**SENIOR INDUSTRIAL HYGIENIST**

Mr. Pfromm was responsible for marketing, planning, implementation, and reporting of a variety of industrial hygiene and indoor air quality services for a broad range of clientele, from factories to school districts. In addition, Mr. Pfromm administered and performed an extensive range of training programs for employees of client school districts to meet state requirements. Mr. Pfromm also administered an environmental services program for a consortium of school districts in New Jersey.

**ROBERT A. PFROMM, CIH****SENIOR TECHNICAL ADVISOR****INDEPENDENT CONSULTING****January 1996 to October 1996****CERTIFIED INDUSTRIAL HYGIENIST**

Mr. Pfromm provided a variety of industrial hygiene and indoor air quality services to a broad range of clientele, from consulting engineers to school districts. In addition, Mr. Pfromm performed an extensive range of training programs.

**ANALYTICAL HYDROLOGY  
ASSOCIATES, LTD. (AHA)****January 1990 to July 1992****ANALYTICAL LABORATORIES OF  
SKELLY AND LOY, INC. (ALSL)****July 1992 to December 1995****CERTIFIED INDUSTRIAL HYGIENIST, DIRECTOR- INDUSTRIAL  
HYGIENE LAB SERVICES, SENIOR ENVIRONMENTAL CHEMIST**

Mr. Pfromm provided a variety of industrial hygiene and indoor air quality services to a broad range of clientele, from consulting engineers to school districts (ALSL). In addition, Mr. Pfromm served as Organics Section Group Leader for the laboratory (ALSL). At Analytical Hydrology Associates (AHA), Mr. Pfromm was Laboratory Manager and Senior Environmental Chemist responsible for all laboratory operations, training of other chemists and report preparation and review.

**TRACOR INSTRUMENTS, INC****October 1988 to January 1990****SENIOR MARKETING REPRESENTATIVE**

Mr. Pfromm provided sales and technical training to clientele of this analytical instrument manufacturer in a variety of environmental and industrial hygiene services to a broad range of clientele, from consulting engineers and laboratories to municipal water treatment authorities. In addition, Mr. Pfromm received the companies' "Presidents Award" for second highest national sales and third highest worldwide sales in 1989.

**ROBERT A. PFROMM, CIH**  
**SENIOR TECHNICAL ADVISOR**

---

**SPOTTS, STEVENS & MCCOY, INC. (SSM)**

**June 1981 to October 1988**

**INDUSTRIAL HYGIENIST, SENIOR ENVIRONMENTAL CHEMIST,  
CERTIFIED INDUSTRIAL HYGIENIST (1988)**

Mr. Pfromm served as Organics Section Group Analyst for the Industrial Hygiene laboratory and later as Group Leader. Mr. Pfromm also provided a variety of industrial hygiene and indoor air quality services to a broad range of clientele, from consulting engineers to school districts. The broad range of projects SSM was involved in as a consulting engineering firm, exposed Mr. Pfromm to a rich level of industrial hygiene and environmental experience which has proven to be extremely valuable in his later endeavors.

---

**E X P E R I E N C E   H I G H L I G H T S**

Since 1988, Mr. Pfromm has had many experiences working on sick building syndrome/indoor air and water quality projects. He has been the project manager on HVAC remediation projects for clients and investigated numerous complaints of illness from indoor airborne/microbial contaminants.

A partial list of Indoor Air Quality and Industrial Hygiene projects that Mr. Pfromm has been directly involved with as either a Project Manager or Lead Investigator follows:

- Chester County Courthouse Annex ~ fungi contamination.
- Little Egg Harbor School District, N.J. – fungi contamination, roof leak.
- Upper Deerfield School District, N.J. – excessive humidity and fungi contamination .
- Upper Saddle River School District, N.J. – fungi contamination.
- Woodridge School District, N.J. – fungi contamination.
- Pennsylvania State Senate Chamber – post remediation fungi clearance sampling.
- Lafayette College, Easton, PA. – fungi sampling in Library following elevated humidity condition.
- Waynesboro Hospital, PA. – investigation of foul odor, fungi and bacteria contamination .
- York Hospital, York, PA. – pre and post remediation fungi sampling in hospital wing.
- a leading surgical instrument manufacturer, Reading, PA. – plant wide survey for trace levels of sulfuric acid vapors, which were causing an etching problem.

## ROBERT A. PFROMM, CIH

### SENIOR TECHNICAL ADVISOR

- Diversified Mechanical Incorporated, PA. – Carbon Monoxide survey in warehouse of DMI client.
- DMI, PA. – Carbon Monoxide survey in an eastern PA. High school.
- Excelsior Blower Corp. PA. – Welding Fume survey in plant to determine effectiveness of improvements to ventilation system.

### LITIGATION SUPPORT AND EXPERT TESTIMONY

Mr. Pfromm has performed many projects over the past twenty (20) years that involved epidemiological investigations, environmental health investigations, indoor air quality (IAQ) and indoor environmental quality (IEQ). Most recently, while at A2SI, Mr. Pfromm managed a comprehensive long-term IAQ/IEQ project for major Pennsylvania State agency that involved extensive health investigation studies, surveys, testing, public relations, and expert testimony. Due to our commitment to client confidentiality, we cannot discuss the details of such survey. However, the following reference is given to verify the work performed for that agency:

Pennsylvania Office of Administration  
Mr. William Trusky  
Manager, Accelerated Grievance Program  
Bureau of Labor Relations  
Room 404 – Finance Building  
Harrisburg, Pennsylvania 17120  
Telephone: 717-783-5160

In addition, Mr. Pfromm has been qualified to provide expert testimony on many occasions, most notably as follows:

- 1985 – expert witness court testimony in a gasoline spill incident;
- 1990 – expert witness court testimony in a case against a laboratory regarding laboratory operations and analytical testing procedures;
- 2001 – expert testimony involving indoor air quality, indoor environmental quality, health related issues, in a project with a major Pennsylvania State agency;
- 2002 – expert testimony in an Alabama case regarding indoor air quality and indoor environmental quality, health related effects, and source identification.

---

**ROBERT A. PFROMM, CIH**  
**SENIOR TECHNICAL ADVISOR**

---

**E D U C A T I O N   A N D   C R E D E N T I A L S**

Kutztown University  
B.S. Environmental Science, 1981  
B.A. Marine Science, 1979

**Certified Industrial Hygienist (CIH)**  
American Board of Industrial Hygiene (ABIH), 1988  
Certificate #3948

**Indoor Environmental Quality (Sub-specialty)**  
American Board of Industrial Hygiene (ABIH), 1999

---

**A D D I T I O N A L   T R A I N I N G**

**Kutztown University** – "Noise and Man - Industrial Noise and Hearing Conservation" – 1981

**University of Michigan** - "Guidelines for the Assessment of Bioaerosols in the Indoor Environment" – 1989

**Harvard University** – **Harvard School of Public Health** – "Indoor Air Quality – Evaluation, Measurement and Control" - 1992

**American Industrial Hygiene Conference (AIHC)** – Professional Development Course (PDC) – "Indoor Air Quality and HVAC Systems" - 1995

**AIHC – PDC** – "Guidelines for the Determination, Remediation and Prevention of Biological Contamination in Indoor Environments" – 1998 & 2001

**MidAtlantic Environmental Hygiene Resource Center** – "Controlling Moisture and Microbial Problems in Buildings" - 1999

---

**P R O F E S S I O N A L   A F F I L I A T I O N S**

**Member, American Industrial Hygiene Association**  
**Member, American Board of Industrial Hygiene**

**ROBERT A. PFROMM, CIH**  
**SENIOR TECHNICAL ADVISOR**

---

P U B L I C   S E R V I C E

- President, Bernville Borough Council (Municipal Government), Bernville, PA
- Chairman, Water, Sewer and Public Safety Committee, Bernville Borough Council
- Member, Budget Committee, Bernville Borough Council
- Chairman, Emergency Services Committee, Bernville Borough Council

---

PAGE 7 OF 7



October 15, 2000  
FINAL REPORT

Jack and Karen Marrone  
354 Timber Road, Mt. Gretna  
Lebanon, PA 17042

**Project: IAQ Survey of the Marrone residence – 354 Timber Road, Mt. Gretna  
A2SI Project # 2008116**

Dear Mr. & Mrs. Marrone:

A2SI was requested by the Marrone's to perform a limited Indoor Air Quality/Indoor Environmental Quality (IAQ/IEQ) survey on 8/28/2000 to determine possible Bioaerosol (airborne Fungi, Mold and Yeast) involvement in Indoor Environmental Quality complaints related to the residence.

**Executive Summary**

The Marrone's have related that the home at 354 Timber Road, Mt. Gretna, was originally shown to them during a period of dryer weather. At that time, they did not observe any signs of water problems or visible mold. It was also stated, that as the weather changed and became damper, they began to notice more and more indicators of potential water problems (dampness in the basement, musty odors and eventually significant visible mold on the paneling and other surfaces). There were also some plumbing problems in the basement that became evident. These problems were indicated by numerous spots on the basement ceiling, where condensation from the pipes was wetting through the drywall ceiling and black spots leaching through at many of these points where mold was possibly growing (a common indicator of mold growth on the top surface of a ceiling). Visible mold became a significant noticeable problem in the basement and the Marrone's became concerned enough to request an IAQ/IEQ evaluation. Several members of the Marrone family were having indications of respiratory distress. Testing was performed as noted in the Scope of Work section, using appropriate methodologies and samples were sent to a qualified laboratory for incubation and identification. Several recommendations were made at the time of sampling based on the observed conditions. Evaluation of the results and observations led to the following conclusions:

Air, surface and carpet dust samples, all indicated the presence of fungi unrelated to the outside air, either by species or number, including the fungi Aspergillus, Penicillium and Stachybotrys, which are known and significant allergens. Heavy visible surface growth, all in the basement, was noted and sampled. The sampled surface locations were as follows: two separate walls in the basement (which appeared to have a coating of a faintly gray/green mold. Several other surfaces

1

---

**CORPORATE HEADQUARTERS**  
4400 LINGLESTOWN ROAD ♦ HARRISBURG, PA. 17112

TELEPHONE: (717) 651-9377  
FAX: (717) 657-0752

had visible indications of mold, but were not sampled as representative surfaces of similar mold had already been sampled. Air samples were as follows: basement air, living room air, and outside the home for control and comparison purposes. Carpet dust was sampled in the basement and the living room. The basement was also found to have high Relative Humidity percentages (RH%) and a measurably higher airborne moisture loading (absolute humidity) than the outside air. The first floor RH% measured in the living room was within ASHRAE guidelines. The basement was found to have significant quantities of surface growth of known allergens and with the elevated interior humidity, additional growth would be possible, potentially resulting in a release of spores and fungal fragments (a "bloom" or amplification), which could challenge the respiratory conditions of the occupants. The cement block foundation interior walls are, in most of the basement covered with "tar paper" followed by fiberglass insulation and finished by wood fiber paneling. When a portion of the "tar paper" was peeled away by the homeowner, the foundation wall and the wall surface side of the "tar paper", were visibly wet.

### Observations

The home has a mostly finished basement, with a cement floor and a cement block foundation. The house is built on rolling terrain, with landscaping in relatively close proximity. The ground around the home appeared quite damp. A2SI was contacted because of the presence of visible mold on a number of interior surfaces of the home, especially the basement, and the homeowners concern for potential health effects until these contaminants are identified. Bioaerosol samples were collected on each floor, with an emphasis on the basement, where most of the visible mold was noticed, and surface samples and carpet dust were also sampled at specific locations. An outside bioaerosol sample was collected for comparison and control purposes, as required by the methodology. In addition to the observations noted in the Executive Summary above, the basement of the house had a noticeably musty odor, with visible mold on many of the observed surfaces. There were also a number of visible wet spots in the basement, primarily on the walls. It was observed, that the most of the interior surface of the below grade (underground) foundation walls were covered first with a layer of tar paper, then with fiberglass insulation between studs, then with the wood paneling. This does not prevent moisture from entering the basement. What this type of wall treatment does do is slow evaporation preventing the walls from drying, allowing excessive mold growth behind the walls and by letting the moisture into the basement, increases the relative humidity throughout the basement making mold growth possible almost anywhere in the basement.

### Scope of Work

A series of samples were collected in the residence located at 354 Timber Road, Mt. Gretna. The purpose of this sampling was to characterize the potential biological contamination in the home following the finding of visible mold inside the home. The samples were collected at several locations throughout the home. Sampling types consisted of airborne biological contaminants (Bioaerosols), collected with an Andersen N6 impaction sampler and Sabouraud's Dextrose Agar (fungal samples). Surface samples were collected with sterile biological transfer swabs. Two carpet dust samples was collected from a 1 square foot area, using 25 mm filter cassettes with 0.45 micron pore size membrane filter and a high volume air pump. Air sampling locations

## Relative Humidity and Temperature Results

Location      Relative Humidity (RH%)      Temperature (°F.)

Outside House	50 %	79
Living room	52%	75
Basement	71%	70

### Results

The outside bioaerosol counts should, in general, always be higher than the inside counts. This situation will occur, if there is a normally functioning ventilation system and if other circumstances effecting bioactosol growth are in an acceptable range. An acceptable range of circumstances would minimize fungi and bacteria growth – such as clean and dry conditions; an unacceptable range of circumstances would help to maximize fungi and bacteria growth – such as dirty and damp or wet conditions.

If windows are open for ventilation, and air exchange is occurring, the counts should be approximately the same, but generally no higher inside than outside and the genera and proportions should be similar. If there is a situation leading to interior amplification of bioaerosol numbers, it should be readily apparent from the counts and proportion comparisons of the different genera of organisms. If the only source of fungal contamination was the outside air, then proportions of fungi in all of the samples inside or out would be comparatively similar. The proportions were determined to be significantly different during this sampling.

The presence of an organism in an interior sample and not in the exterior sample requires either active growing colonies of the organism or a reservoir of viable spores to be present in the building. For this apparent amplification to be possible, several requirements must be met or have been met at some time in the recent past. They are as follows: a substrate or growth media, appropriate temperature conditions, and adequate or excessive moisture. Normal dust and dirt are generally adequate to serve as a minimal growth media, but carpeting and the dirt it traps is even more favorable for growth. Virtually any surface in a home has an adequate source of nutrients for fungal growth to begin and occasionally the fungi can colonize the substrate (such as paneling). Over time the available nutrients on surfaces tend to increase through deposition such as cooking oils which became volatile when heated, or from application, such as cleaning agents. It is well documented that virtually any surface will have adequate nutrition for fungi to begin growing. Relative humidity percentages of greater than 60% are adequate for some fungal growth to begin, but higher humidity makes it more likely, and damp or wet surfaces will be ideal for growth. The RH% values make it clear, that at the time of sampling, the interior of the basement of the house was more humid than the outside air. This helps to create an ideal condition for mold and fungi growth.

The living room air sample (005) was lower in total counts then the outside sample, and the species present and the proportions of different fungi were similar to the outside sample for 2 out

of 3 organisms. The additional fungi is present in the basement in elevated numbers, and the quantities found in the living room for this fungi could easily be explained by normal air movement in the house, even with the basement door closed. The basement air sample (003) was much higher in total counts than the outside sample (007), and the species present and the proportions of different fungi were also significantly different from the outside sample indicating the presence of single or multiple repositories of growth and/or amplification points. This conclusion was supported by the readily visible fungal growth found in the basement and the laboratory results, which confirmed this as well.

The carpet samples in both the living room (006) and the basement (004), indicate contamination by a variety of fungi. However, the basement carpet represents a potential respiratory hazard. The living room carpet results, while indicative of contamination, appear to be controllable by HEPA vacuuming and aggressive carpet cleaning, disinfection and rapid drying. Every effort should be made to control excess moisture in this home. As noted above, the basement carpet is significantly contaminated and is very possibly the primary source contributing to the high air counts found for both *Aspergillus* and *Penicillium*. As we recommended during our sampling visit, this carpet should be disposed of. The living room carpet is by itself unlikely to produce substantial airborne bioaerosols unless it is aggressively disturbed as with vacuuming using a non-HEPA filtered vacuum, or if the carpet was allowed to become damp or wet for an extended period. This could occur if the carpet was cleaned and not quickly and thoroughly dried. As we recommended during our sampling visit, only a HEPA filtered vacuum should be used in a carpeted home or area with allergens present and allergy sufferers in residence.

No bioremedial efforts will be successful if the moisture levels remain elevated. Even though the living room air samples have lower total fungal counts than the outside sample, there are a number of species of concern from an IAQ and allergen perspective. The living room air sample (005) contained mostly *Cladosporium*, which is considered a fairly mild allergen and is the predominant fungi in the outside sample. This sample also contained a low number of *Aspergillus* sp., a genus with generally stronger allergen effects and a similar count of *Penicillium* sp., generally considered somewhat less allergenic than the *Aspergillus* sp. and also in low numbers. The basement air sample (003) had a much higher count than the outside sample and more significantly, the predominant fungi was *Penicillium* sp., not *Cladosporium* sp. as in the outside sample, indicating a significant reservoir of *Penicillium* in the basement. In fact, the basement sample did not have any detectable *Cladosporium* sp., but the presence of any *Cladosporium* may have been masked by the other growth. The remainder of fungi in the basement air sample was *Aspergillus* sp., also in significantly high but somewhat lower numbers than the *Penicillium*.

A swab sample (001) was collected from the basement wall paneling on the outside of the bathroom (not an exterior wall, adjacent to the foundation, but an interior wall). This sample was collected due to the possible appearance of fungi growth on that surface. This surface coating was a dusting, of light gray to green in color. The lab results indicate a significant presence of *Stachybotrys* sp. fungi spores on that surface. The fungi growth observed on the wall surface did not have the characteristic appearance of *Stachybotrys* (black and moist) and the paneling did not appear to be at the time of the sampling or to ever have been wet to the extent normally

associated with Stachybotrys. The paneling in this area was dry and unstained. The second swab sample collected in the basement (002) was sampled from the wet foundation wall, after lifting up a section of the tar paper that presently covers most of the below grade interior wall surface. This sample had a very similar proportion of Stachybotrys and Aspergillus to the other wall sample. This sample also had one additional fungi (Mucor sp.), which prefers wet conditions.

### Conclusions

There were noteworthy indications of fungal contamination in this house. The fungi found are of significant concern from an allergen aspect, dependant on the sensitivity of the exposed person. These levels could possibly be at symptomatic concentrations, if the exposed person is, in fact, sensitive to these species. As noted above, conditions are adequate for additional growth to occur, with the elevated RH% and the existing surface growth, which could substantially increase the exposure risk for a susceptible individual, such as an asthmatic. Appropriate medical testing on the occupants by qualified medical personnel could assist in determining the susceptibility of these individuals. Based on the observed and confirmed surface growth of Aspergillus and Penicillium (carpet) in this home, and the non-typical presence of Stachybotrys, it would be prudent to limit occupancy by individuals known to have a physical condition aggravated by fungal contamination. At least until corrective actions have been completed and the effectiveness of these actions confirmed by follow-up testing.

Some fungi of the genus Aspergillus are opportunistic pathogens in susceptible immunosuppressed individuals (HIV or AIDS patients, organ transplant patients, chemotherapy patients and diabetics are some examples of these). The levels of contamination found in this residence should be controlled with aggressive means to prevent any increases, reduce the existing populations and return the interior populations to the ideal of a reduced version of the exterior populations. The amount of surface fungi present could under existing conditions of growth produce a substantial airborne allergen count in this home, especially as the season requires that the windows be closed, thus reducing the air exchange of this house. So far, based on the sampling, there does not appear to be an excessive transfer of allergens to the first floor from the basement. As noted in the air samples, despite the presence of Stachybotrys in the basement, there was none detected in the basement air sample. Stachybotrys is usually not detected in air samples due to the normal state of the spores (wet and sticky).

It is obvious from the inspection observations and the lab results that this home and specifically the basement were at the time of sampling significantly damp and contaminated with a variety of allergenic fungi. The susceptibility of the occupants to these allergens and the quantities present are the deciding factors in how the occupants will react to this exposure.

It is essential that the moisture problems with the basement foundation be corrected and that steps be taken to reduce relative humidity levels in the basement and in the main portion of the house. Based on observations, the carpet in the living room is also a very likely source reservoir of some of the airborne concentrations. Controlling moisture is the primary method of controlling mold, fungi and bacteria in a residence. Additional aggressive cleaning (with HEPA vacuums) and disinfection may be needed.

## Recommendations

- 1.) Until the presence of the elevated fungal growth, specifically Stachybotrys and Aspergillus sp., is reduced or removed, occupation of the basement of this home would generally not be recommended.
- 2.) Until other steps can be taken, we strongly recommend that all vacuuming of carpets and furnishings done in this home, only be done with a true HEPA filtered vacuum cleaner.
- 3.) Install a dehumidifier (more than one if necessary) in the basement permanently and operate a unit in the main occupied area of the house when humidity is high.
- 4.) Portable HEPA filtration units can be used in occupied rooms to further reduce airborne allergens of all types, if needed.
- 5.) Redirect all downspouts so that flow of rain water from the gutters does not directly contact the side of the foundation or saturate the ground directly adjacent to the house. This recommendation also applies to the sump pump discharge.
- 6.) Sample additional locations in the basement to localize contamination sources there and to determine extent of remediation or precautions required for use and occupancy.
- 7.) Evaluate additional waterproofing methods for the foundation (exterior or interior methods), many options are available.
- 8.) It may be of value to have the entire house "fogged" with a biocidal disinfectant (several types are available) to eliminate viable free floating fungal spores, and to eliminate surface contamination on walls and hard surfaces. This process would not eliminate contamination from carpets or furnishings, as spores may be deep into the pile or fabric. Fogging will also not control the growth of fungi behind the "tar paper" water proofing in the basement. Further bioremediation suggestions are possible. The use of Ozone treatment systems is generally not recommended to control fungi and bacteria due to inconsistency of treatment, inability of the Ozone to penetrate porous materials, questionable effectiveness under different circumstances and the known toxicity of Ozone (OSHA limit of 0.1 ppm). The EPA has a great deal of information on this application and does not recommend it.
- 9.) The basement "waterproofing" should all be removed and the walls disinfected. More effective true waterproofing methods should be implemented to dry the basement. These methods may include any of the following: foundation exterior application of waterproofing agents with drainage tile; interior drainage of the block wall with interior application of a waterproofing material; in either case, dehumidification will be necessary.

Case 1:01-cv-00773-YK Document 162-2 Filed 09/16/03 Page 58 of 64

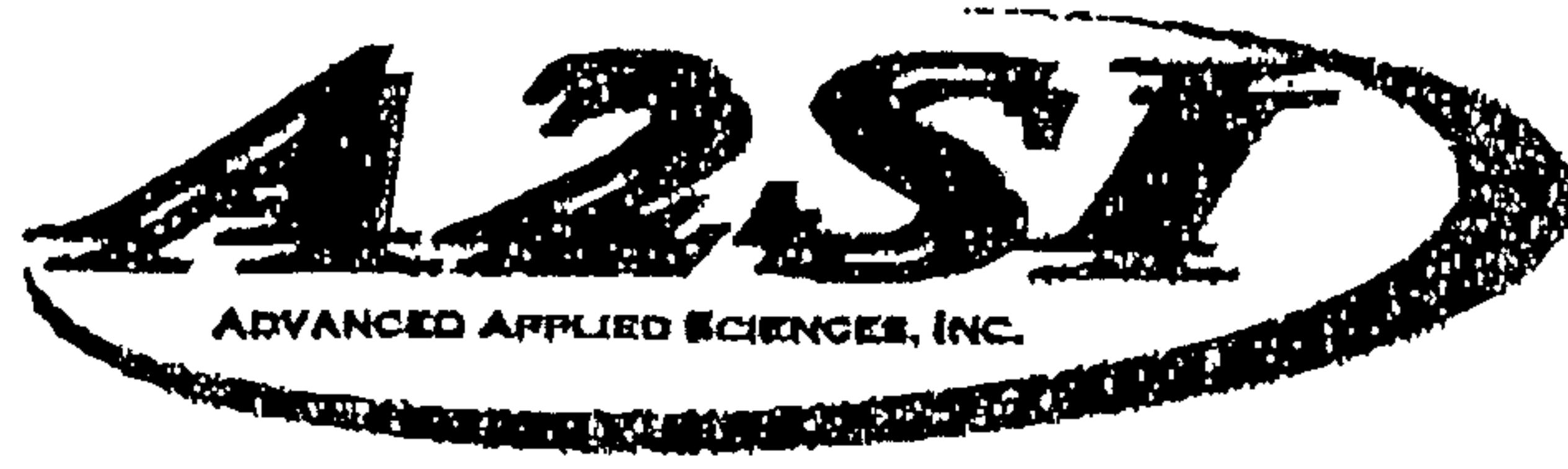
These recommendations may not be in order of urgency, as we feel all may be necessary to complete the control of the contamination in this residence. We would be pleased to discuss these recommendations further. If you have any questions in reference to this report, please contact us at your earliest convenience.

Sincerely,



Robert A. Pfromm, CIH  
Project Manager  
Advanced Applied Sciences, Inc.

**APPENDIX 1**



## LABORATORY REPORT

### CLIENT PROJECT INFORMATION

Client Name:	Maitrone	Project Manager:	Robert Pfromm, CIH
Address:		Project ID:	2008116
		Project Number:	
		Telephone:	
		Fax:	

### LABORATORY PROJECT INFORMATION

Project Number:	2008106	Date Received:	8/28/00
Project Manager:	Robert J. Lesher, Ph.D.	Due Date:	NA
Quote Number:	NA	Date Completed:	9/10/00
Invoice Number:	NA		

## LABORATORY RESULTS

FIELD SAMPLE ID	Sample Type	LOCATION DESCRIPTION	RESULT	ISOLATE	UNITS
82800-001	Wipe, 1sq. in.	Basement Wall 1	>300 36	Fungal Isolates Stachybotrys sp. Aspergillus sp.	CFU/in <sup>2</sup>
82800-002	Wipe	Basement Wall 2	276 40 6	Fungal Isolates Stachybotrys sp. Aspergillus sp. Mucor sp.	CFU/in <sup>2</sup>
82800-003	Air, 85 liters	Basement	3192 1116	Fungal Isolates Penicillium sp. Aspergillus sp.	CFU/m <sup>3</sup>
82800-004	Vac, 144 sq. in.	Carpet Basement	>3000 1300 90	Fungal Isolates Penicillium sp. Aspergillus sp. Alternaria sp.	CFU/in <sup>2</sup>
82800-005	Air	Living Room	180 24 24	Fungal Isolates Cladosporium sp. Aspergillus sp. Penicillium sp.	CFU/m <sup>3</sup>

Advanced Applied Sciences, Inc.

Project Number 2008106

Page 1

**CORPORATE HEADQUARTERS**  
 4400 LINGLESTOWN ROAD ♦ HARRISBURG, PA, 17112

TELEPHONE: (717) 651-9377  
 FAX: (717) 657-0752



## LABORATORY RESULTS

FIELD SAMPLE ID	Sample Type	LOCATION DESCRIPTION	RESULT	ISOLATE	UNITS
82800-006	Vac, 144 sq. in.	Carpet, Living Room	920 310 60 31	<u>Fungal Isolates</u> Penicillium sp. Aspergillus sp. Chrysosporium sp. Epicoccum sp.	CFU/in <sup>2</sup>
82800-007	Air	Outside	468 60 60	<u>Fungal Isolates</u> Cladosporium sp. Epicoccum sp. Penicillium sp.	CFU/m <sup>3</sup>

### Laboratory Report Approval

Approved By: Robert J. Lesher

Robert J. Lesher, Ph.D.  
Laboratory Director

Date Approved: 9/13/02

Advanced Sciences, Inc.

Project Number 2008106

Page 2

CORPORATE HEADQUARTERS  
4400 LINGLESTOWN ROAD ♦ HARRISBURG, PA. 17112

TELEPHONE: (717) 651-9377  
FAX: (717) 657-0752



ADVANCED APPLIED SCIENCES, INC.

# Chain-of-Custody Sample Submittal Form

CLIENT:

2008106

Page \_\_\_\_\_ of \_\_\_\_\_

PROJECT:

DUE:

LAB ORGANIZATION				CLIENT INFORMATION AND PROJECT INFORMATION				LAB NO.																																											
Company	AJS /	Project Name	MARRONE					Analysis Requested																																											
Contact	ROBERT PFERLEIN	Project No.	2008116																																																
Address		P.O. #																																																	
		Telephone																																																	
Turnaround Time: <input checked="" type="checkbox"/> 5-10 Days <input type="checkbox"/> Rush (Specify) _____																																																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">Sample Matrix</th> </tr> <tr> <th>Lab ID</th> <th>Sample Type</th> <th>Date Collected</th> <th>Analyst</th> </tr> </thead> <tbody> <tr> <td>P2800 - Client Sampled</td> <td></td> <td></td> <td></td> </tr> <tr> <td>-001 BASEMENT WALL 1</td> <td>✓</td> <td>8/28/00</td> <td>1 ✓</td> </tr> <tr> <td>-002 BASEMENT WALL 2</td> <td>✓</td> <td></td> <td>1 ✓</td> </tr> <tr> <td>-003 BASEMENT AIR</td> <td>✓</td> <td>85</td> <td>✓</td> </tr> <tr> <td>-004 CARPET DUST BASEMENT</td> <td>✓</td> <td>144</td> <td>✓</td> </tr> <tr> <td>-005 LIVING ROOM</td> <td>✓</td> <td>85</td> <td>✓</td> </tr> <tr> <td>-006 CARPET DUST LVRM</td> <td>✓</td> <td>144</td> <td>✓</td> </tr> <tr> <td>-007 OUTSIDE</td> <td>✓</td> <td>85</td> <td>✓</td> </tr> </tbody> </table>				Sample Matrix				Lab ID	Sample Type	Date Collected	Analyst	P2800 - Client Sampled				-001 BASEMENT WALL 1	✓	8/28/00	1 ✓	-002 BASEMENT WALL 2	✓		1 ✓	-003 BASEMENT AIR	✓	85	✓	-004 CARPET DUST BASEMENT	✓	144	✓	-005 LIVING ROOM	✓	85	✓	-006 CARPET DUST LVRM	✓	144	✓	-007 OUTSIDE	✓	85	✓								
Sample Matrix																																																			
Lab ID	Sample Type	Date Collected	Analyst																																																
P2800 - Client Sampled																																																			
-001 BASEMENT WALL 1	✓	8/28/00	1 ✓																																																
-002 BASEMENT WALL 2	✓		1 ✓																																																
-003 BASEMENT AIR	✓	85	✓																																																
-004 CARPET DUST BASEMENT	✓	144	✓																																																
-005 LIVING ROOM	✓	85	✓																																																
-006 CARPET DUST LVRM	✓	144	✓																																																
-007 OUTSIDE	✓	85	✓																																																

INVOICE NUMBER/TYPE OF SAMPLE/SAMPLE SOURCE		GENERAL COMMENTS OR SPECIAL INSTRUCTIONS	
Client:			
Address:			
Phone:			
Fax:			

Sample ID#	Date Collected	Accepted By	Date	Time
<i>Robert Pferlein</i>	<i>8/28/00</i>			
Received by Lab:	Date	Accepted by Lab:	Date	Time
<i>Robert Pferlein</i>				
<i>Robert Pferlein</i>	<i>8/28/00</i>	<i>J. Tech</i>	<i>8/28/00</i>	

NOTE: Rush TAT must be pre-arranged. Surcharges will be applied accordingly.

**ADVANCED APPLIED SCIENCES, INC.**  
4400 LINGLESTOWN ROAD ♦ HARRISBURG, PA, 17112

TELEPHONE: (717) 651-9377  
FAX: (717) 657-0752

included the basement, the first floor living room, and an outside sample for comparison and control. Surface samples were all collected in the basement, from suspected visible mold, and carpet dust was collected from the carpet in the basement and in the living room. Actual fungal ID's and counts were detailed in the lab report (Attached Appendix A).

This indoor air quality survey was performed within the scope of work and in accordance with chosen professional standards and guidelines, and in accordance with known applicable regulatory requirements and guidelines. The sample collection, laboratory analyses, data reduction and calculations, interpretations, and evaluations were performed accurately to the best knowledge of A2SI. A2SI assumes no liability for financial or health consequences from the actions or lack of actions taken by the Marrone family, or others, as a result of this report. All collected data, observations, conclusions, and recommendations presented in this report were influenced by the conditions which existed at the time of the survey and sample collection, and are representative of those conditions existing at the time of sampling and in the location sampled.

### Sample Locations

<u>Sample ID Number</u>	<u>Sample Type</u>	<u>Location</u>
82800-001	Surface swab -- Mold and Fungi	Wall in basement
82800-002	Surface swab – Mold and Fungi	Wall in basement
82800-003	Air Sample - Mold and Fungi	Basement air
82800-004	Carpet dust – Mold and Fungi	Carpet dust in Basement
82800-005	Air Sample - Mold and Fungi	Living room air
82800-006	Carpet dust - Mold and Fungi	Carpet dust in Living room
82800-007	Air Sample - Mold and Fungi	Outside air

### Sample Results Summary

<u>Sample ID Number &amp; Type</u>	<u>Total Fungi - CFU/unit</u>
82800-001 Surface swab –	>336 CFU/in <sup>2</sup>
82800-002 Surface swab –	322 CFU/in <sup>2</sup>
82800-003 Air Sample –	4308 CFU/m <sup>3</sup>
82800-004 Carpet dust –	>4390 CFU/ in <sup>2</sup>
82800-005 Air Sample –	228 CFU/m <sup>3</sup>
82800-006 Carpet dust –	1321 CFU/ in <sup>2</sup>
82800-007 Air Sample -	588 CFU/m <sup>3</sup>

CFU/in<sup>2</sup> - Colony Forming Units/square inch; CFU/m<sup>3</sup> - Colony Forming Units/cubic meter  
Detailed Bacteria and Fungi results are found in Appendix 1

**CERTIFICATE OF SERVICE**

AND NOW, this 16<sup>th</sup> day of May, 2003, I hereby certify that I, Jennifer L. Murphy, served a copy of the Appendix in Support of Defendant's HouseMaster's Motion to Preclude Expert Reports and Testimony of Eckardt Johanning, M.D. on the following by depositing a true and correct copy of the same in the U.S. Mail at Harrisburg, Pennsylvania, postage prepaid, addressed to:

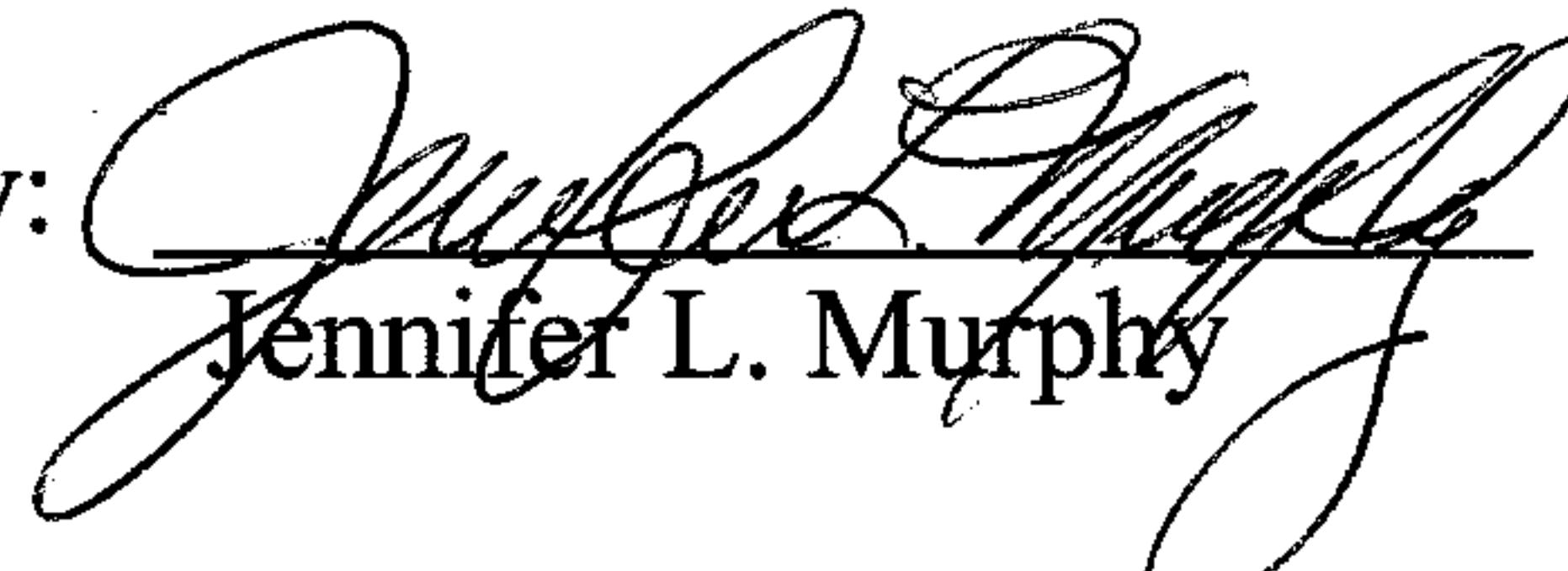
James G. Nealon, III, Esquire  
Nealon & Gover, P.C.  
2411 North Front Street  
Harrisburg, PA 17110

John Flounlacker, Esquire  
Thomas, Thomas & Hafer, LLP  
305 North Front Street  
Harrisburg, PA 17108

Edward A. Monsky, Esquire  
Fine, Wyatt & Carey, P.C.  
425 Spruce Street  
Scranton, PA 18501-0590

Gianni Floro, Esquire  
Tarasi, Tarasi & Fishman, P.C.  
510 Third Avenue  
Pittsburgh, PA 15219

Joel D. Gusky, Esquire  
Harvey, Pennington, Cabot, Griffith & Renneisen, Ltd.  
Eleven Penn Center  
1835 Market Street, 29<sup>th</sup> Floor  
Philadelphia, PA 19103

By:   
Jennifer L. Murphy